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Supplemental Material: Azimuthal single- and double-spin asymmetries in semi-inclusive deep-inelastic lepton scattering by transversely polarized protons

The HERMES Collaboration

Abstract: The data tables of azimuthal single-spin and double-spin asymmetries in semi-inclusive leptoproduction of pions, charged kaons, protons, and antiprotons from transversely polarized protons are presented. The sine of the polar angle between the lepton-beam and the virtual-photon directions is tabulated to facilitate corrections for the contribution from the longitudinal target-polarization component. The data tables are complemented with additional figures of rapidity, transverse momemtum versus Q^2, as well as of numerous two-dimensional distributions in typical kinematics of the deep-inelastic scattering process.

Keywords: Lepton-nucleon scattering, fixed-target experiments, QCD, polarization

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Contents

1 Contribution from longitudinal target polarization

The target-polarization orientation in the experimental setup refers to the lepton-beam direction, in contrast to the virtual-photon direction used for the Fourier decomposition of the semi-inclusive DIS cross section in theory. As detailed in appendix A of the main paper, this results in a non-vanishing longitudinal component of the target polarization with respect to the virtual-photon direction even in case of a transversely polarized hydrogen target, as employed in this measurement. The size of this component is kinematics dependent and scales with $\sin\theta_{\gamma^*}$, where θ_{γ^*} is the polar angle between the incoming-lepton and the virtual-photon directions. The average $\sin\theta_{\gamma^*}$ is given in table 1 for the three-dimensional kinematic binning used for mesons.

2 Separation of target and current fragmentation

In this measurement, hadrons were selected that have a high probability to stem from the current fragmentation. For that a minimum z of 0.2 is required, which predominantly selects forward-going hadrons in the virtual-photon–proton center-of-mass system, forward

	$P_{h\perp}$ [GeV]	0.0 – 0.23	0.23 – 0.36	0.36 – 0.54	0.54 – 2.0
x	z	Average $\sin\theta_{\gamma^*}$			
0.023 – 0.072	0.20 – 0.28	0.0544 ± 0.0001	0.0449 ± 0.0001	0.0400 ± 0.0001	0.0335 ± 0.0001
	0.28 – 0.37	0.0597 ± 0.0002	0.0499 ± 0.0001	0.0441 ± 0.0001	0.0379 ± 0.0001
	0.37 – 0.49	0.0626 ± 0.0002	0.0541 ± 0.0002	0.0479 ± 0.0001	0.0406 ± 0.0001
	0.49 – 0.70	0.0648 ± 0.0002	0.0587 ± 0.0002	0.0528 ± 0.0002	0.0448 ± 0.0001
0.072 – 0.098	0.20 – 0.28	0.0799 ± 0.0002	0.0699 ± 0.0002	0.0670 ± 0.0002	0.0584 ± 0.0003
	0.28 – 0.37	0.0893 ± 0.0002	0.0797 ± 0.0003	0.0737 ± 0.0003	0.0663 ± 0.0003
	0.37 – 0.49	0.0920 ± 0.0003	0.0862 ± 0.0003	0.0781 ± 0.0003	0.0708 ± 0.0003
	0.49 – 0.70	0.0943 ± 0.0003	0.0908 ± 0.0003	0.0845 ± 0.0003	0.0737 ± 0.0003
0.098 – 0.138	0.20 – 0.28	0.0947 ± 0.0002	0.0848 ± 0.0003	0.0826 ± 0.0003	0.0747 ± 0.0004
	0.28 – 0.37	0.1070 ± 0.0003	0.0981 ± 0.0003	0.0906 ± 0.0004	0.0848 ± 0.0004
	0.37 – 0.49	0.1124 ± 0.0003	0.1095 ± 0.0004	0.0974 ± 0.0004	0.0890 ± 0.0004
	0.49 – 0.70	0.1126 ± 0.0004	0.1128 ± 0.0004	0.1076 ± 0.0004	0.0925 ± 0.0004
0.138 – 0.600	0.20 – 0.28	0.1257 ± 0.0002	0.1249 ± 0.0004	0.1205 ± 0.0004	0.1169 ± 0.0007
	0.28 – 0.37	0.1359 ± 0.0003	0.1396 ± 0.0004	0.1331 ± 0.0005	0.1275 ± 0.0006
	0.37 – 0.49	0.1381 ± 0.0003	0.1422 ± 0.0004	0.1394 ± 0.0005	0.1300 ± 0.0006
	0.49 – 0.70	0.1391 ± 0.0004	0.1411 ± 0.0004	0.1429 ± 0.0004	0.1334 ± 0.0005

Table 1. Average $\sin\theta_{\gamma^*}$ for the same three-dimensional binning in x, z, and $P_{h\perp}$ used for the analysis of azimuthal asymmetries of charged mesons (using here the π^+ data). The first two columns specify the x and z bin boundaries, while the remaining four columns provide the average $\sin\theta_{\gamma^*}$ for each bin in $P_{h\perp}$, with its bin boundaries given in the very first row.

being the direction of the virtual photon. One measure for the "forwardness" is the rapidity y_h, as discussed in the main paper.

Here, rapidity distributions for the three-dimensional binning are presented that go beyond those shown in the main manuscript, e.g., including distributions for all x bins and for π^+, K^+, and protons. The rapidity distributions for π^+ are shown in figures 1 and 2 for the four x ranges. Likewise, the distributions for K^+ are shown in figures 3 and 4, while protons are presented in figures 5 and 6.

3 Transverse-momentum versus hard scale

As discussed in section 2 and appendix B of the main paper, the interpretation of transverse-momentum-dependent azimuthal distributions in terms of TMD PDFs and FFs requires the presence of one hard scale (Q^2) and transverse momentum that is small in comparison to Q^2. Under these conditions, the transverse momentum of the hadron observed can be interpreted as originating from non-pertubative sources in the initial proton structure and the fragmentation process (including their calculable variations with the hard scale). In this measurement, $P_{h\perp}$ is of the order of the QCD scale. However, Q^2 is neither always very large compared to the proton mass nor compared to the transverse momentum. For that reason, the hadron-yield distribution in Q^2 versus transverse momentum is further explored for the three-dimensional binning.

In figures 7–12, the squared transverse momentum $\mathbf{q}_T^2 \equiv P_{h\perp}^2/z^2$ is compared to Q^2 in the 16 (z, $P_{h\perp}$) bins for the four x bins, for π^+, K^+, and protons, respectively. Likewise, the squared transverse momentum $P_{h\perp}^2$ is compared to Q^2 in figures 13–18.

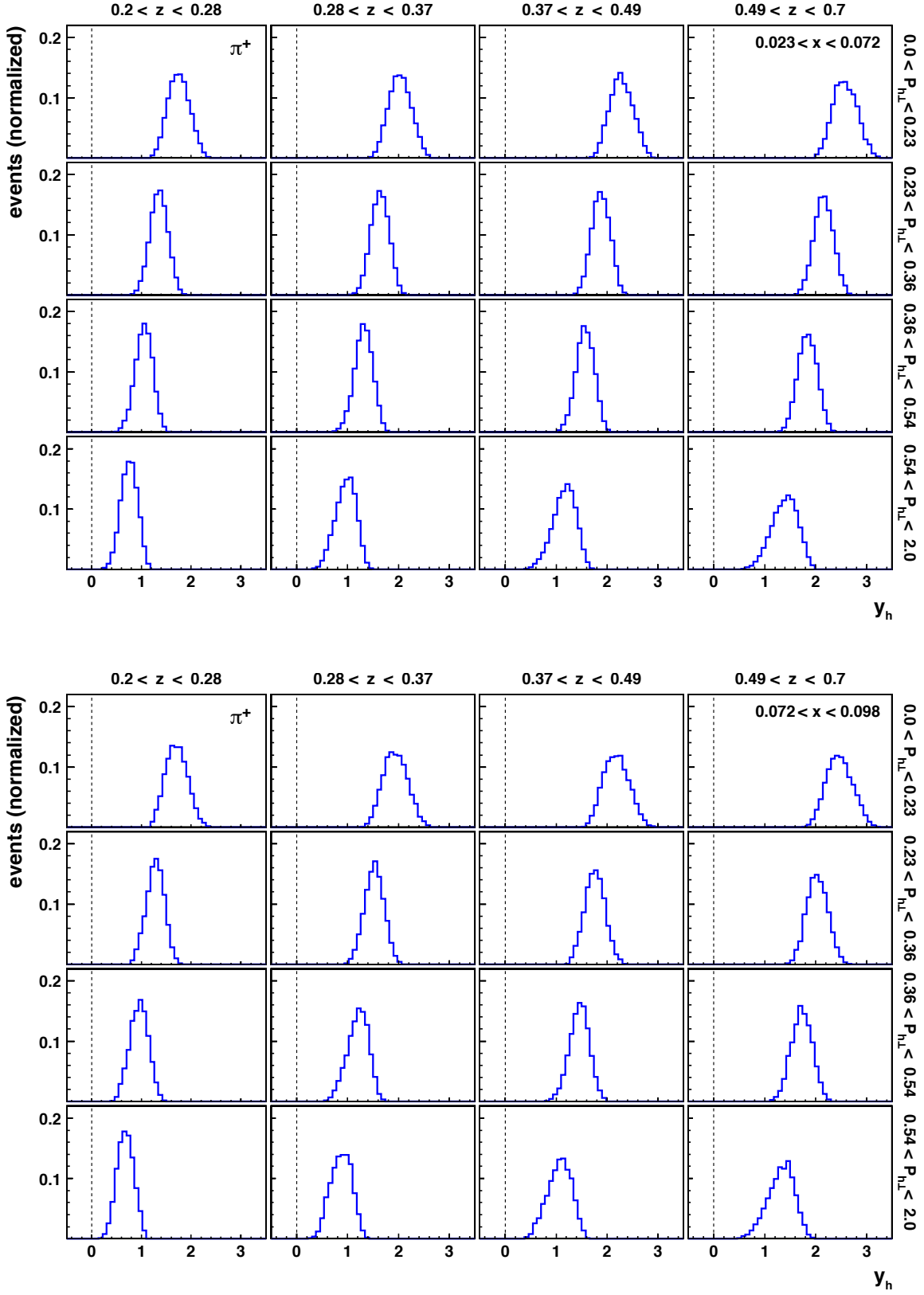

Figure 1. Rapidity distributions for π^+ in the various (z, $P_{h\perp}$) bins of the first (top) and second (bottom) x bins. The dashed lines indicate zero rapidity.

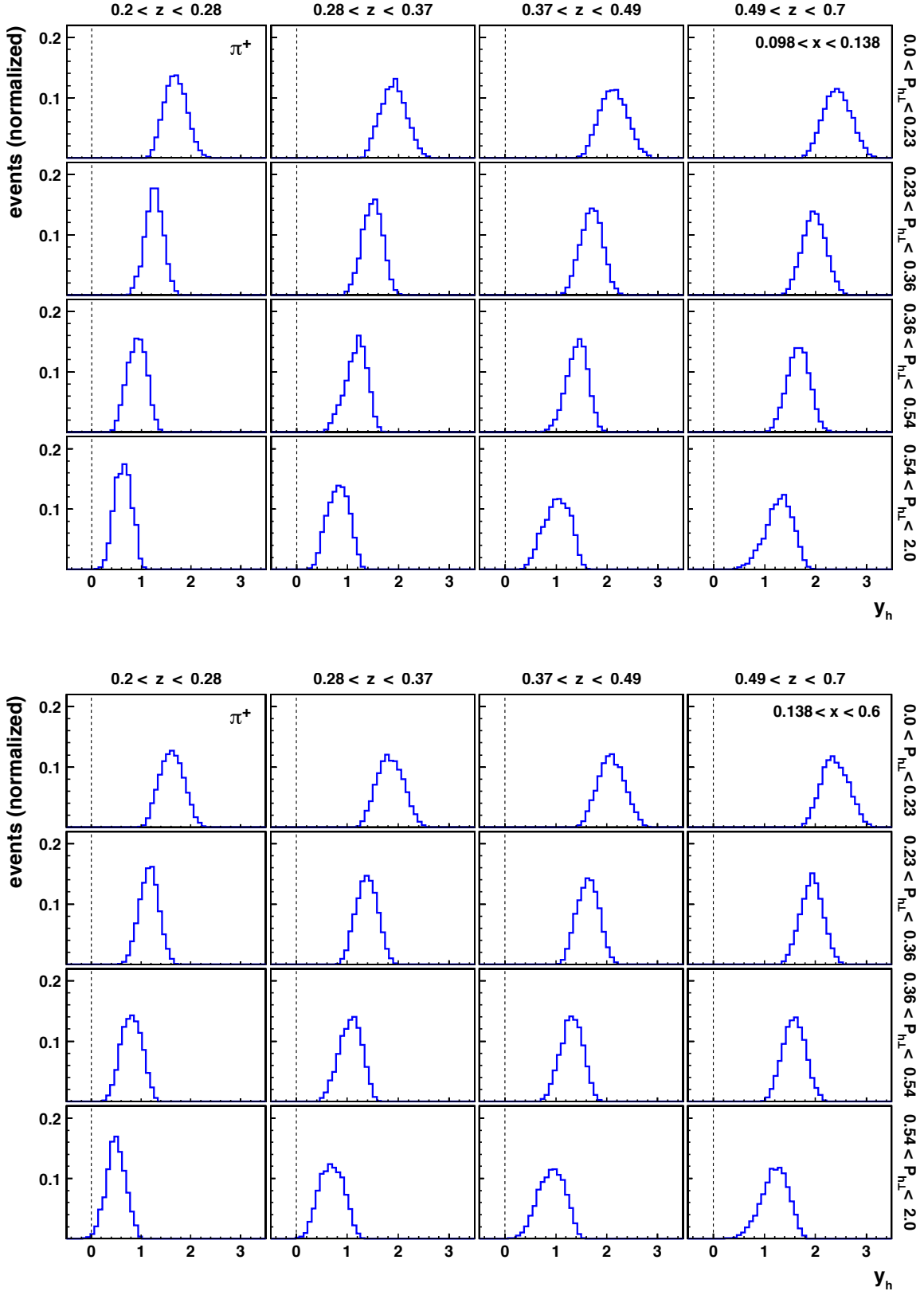

Figure 2. Rapidity distributions for π^+ in the various (z, $P_{h\perp}$) bins of the third (top) and last (bottom) x bins. The dashed lines indicate zero rapidity.

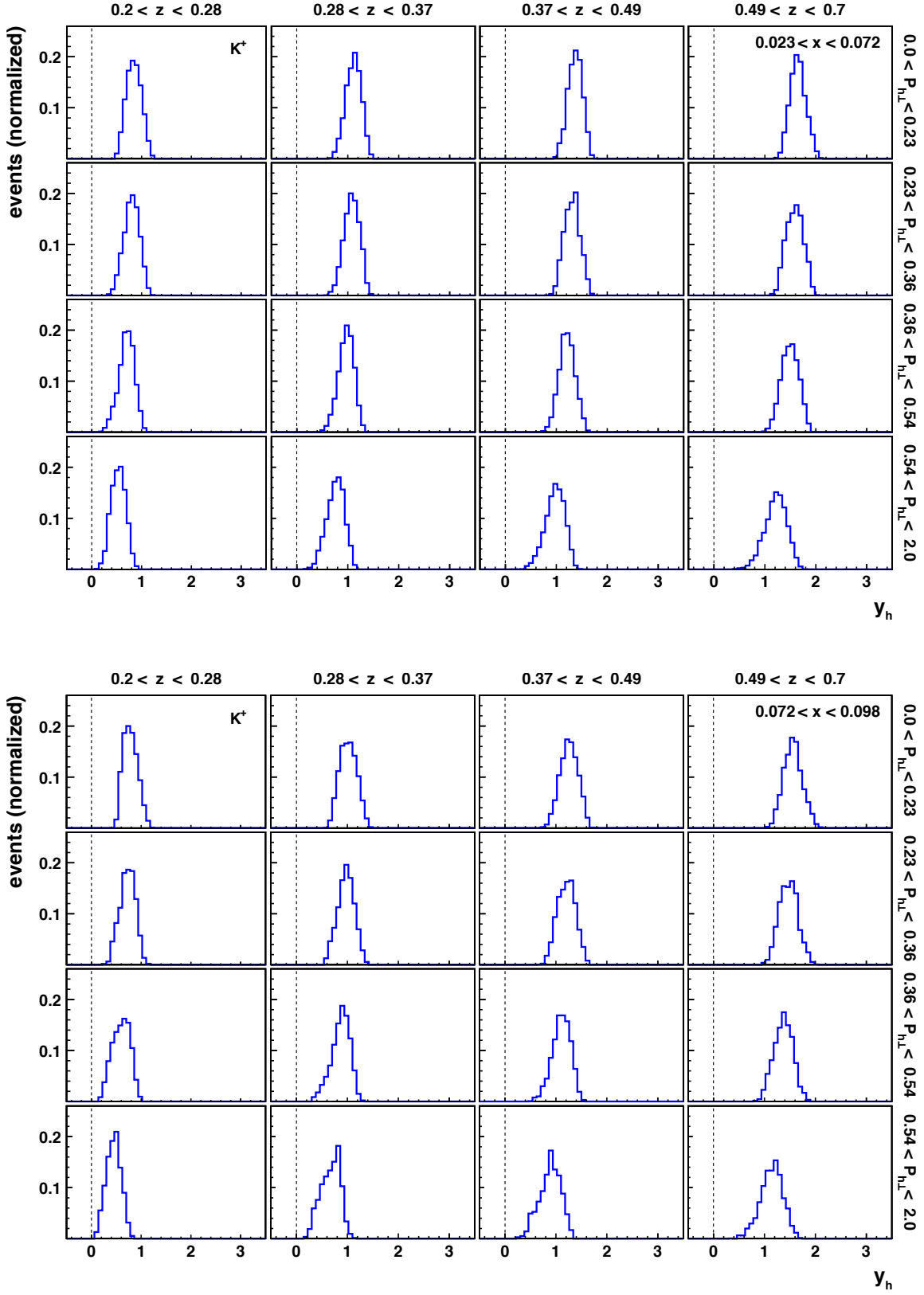

Figure 3. Rapidity distributions for K^+ in the various (z, $P_{h\perp}$) bins of the first (top) and second (bottom) x bins. The dashed lines indicate zero rapidity.

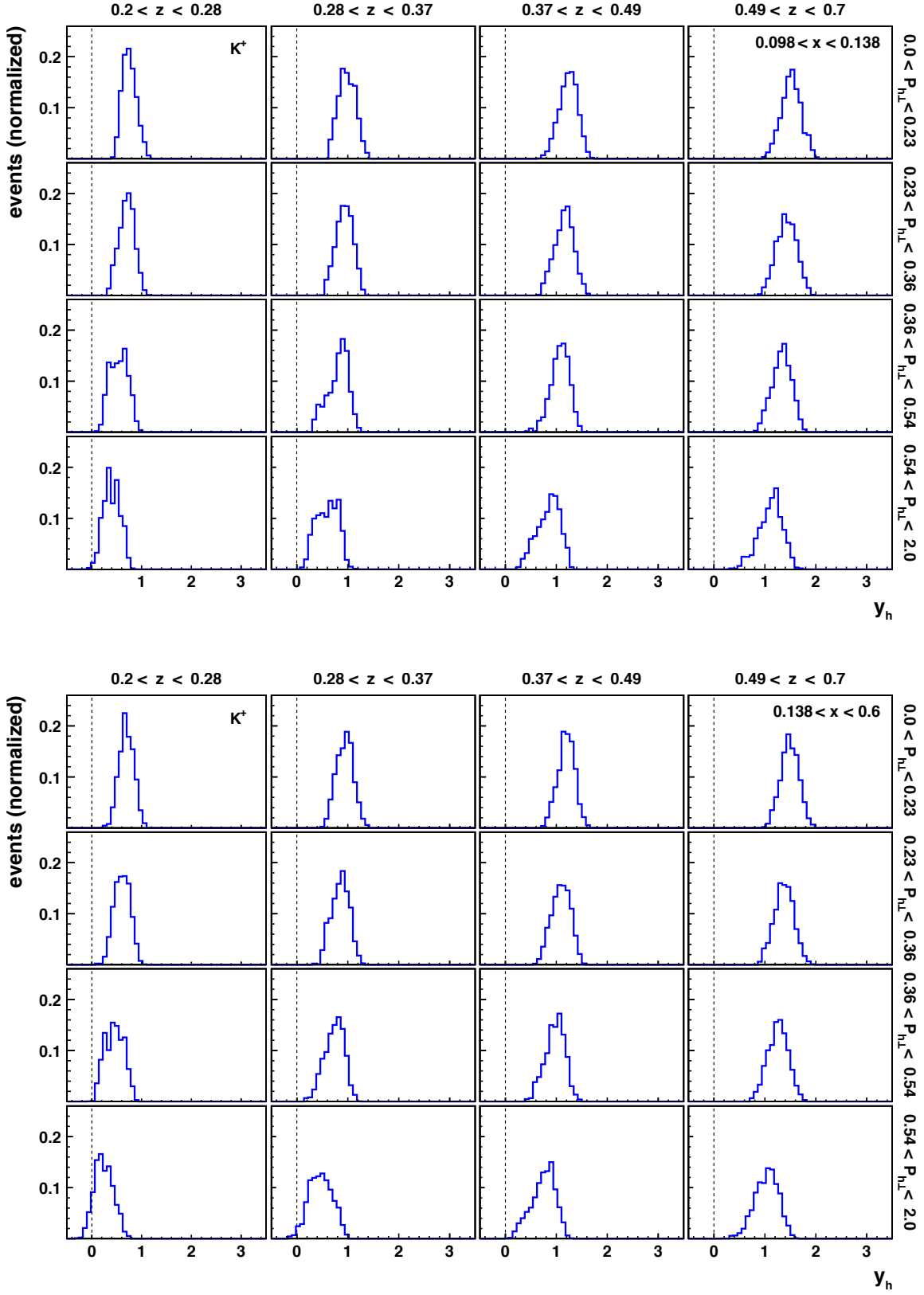

Figure 4. Rapidity distributions for K^+ in the various (z, $P_{h\perp}$) bins of the third (top) and last (bottom) x bins. The dashed lines indicate zero rapidity.

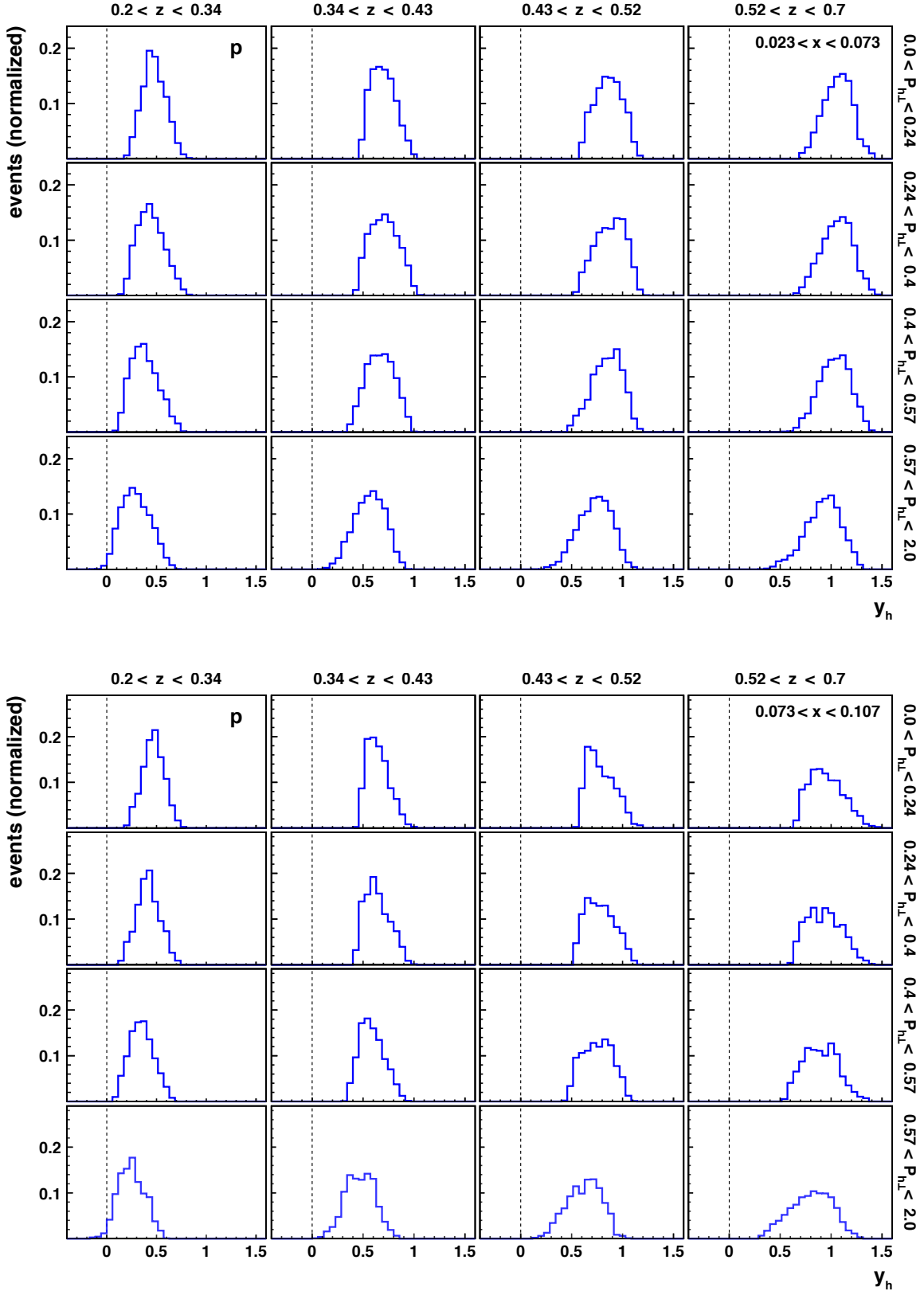

Figure 5. Rapidity distributions for protons in the various (z, $P_{h\perp}$) bins of the first (top) and second (bottom) x bins. The dashed lines indicate zero rapidity.

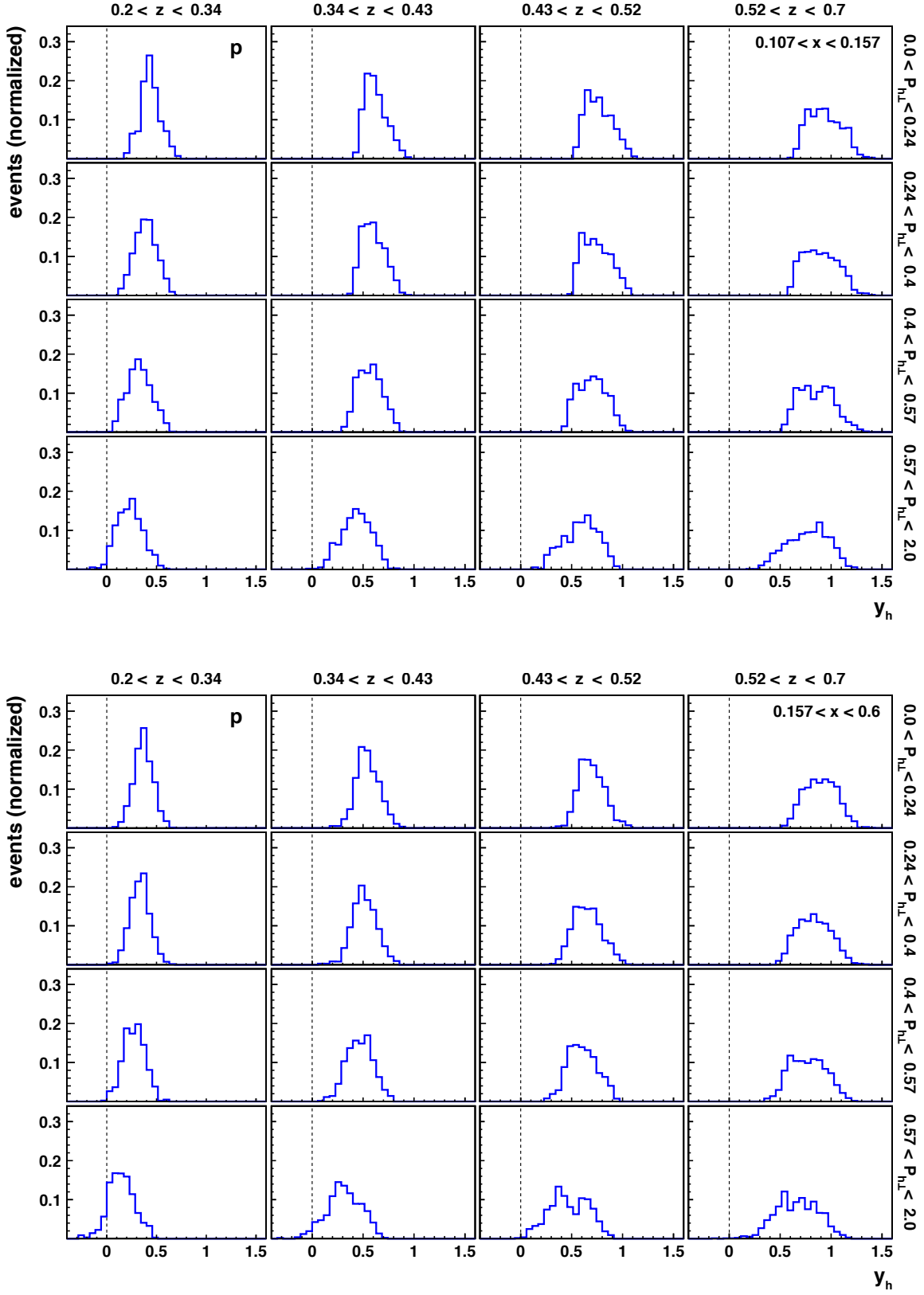

Figure 6. Rapidity distributions for protons in the various (z, $P_{h\perp}$) bins of the third (top) and last (bottom) x bins. The dashed lines indicate zero rapidity.

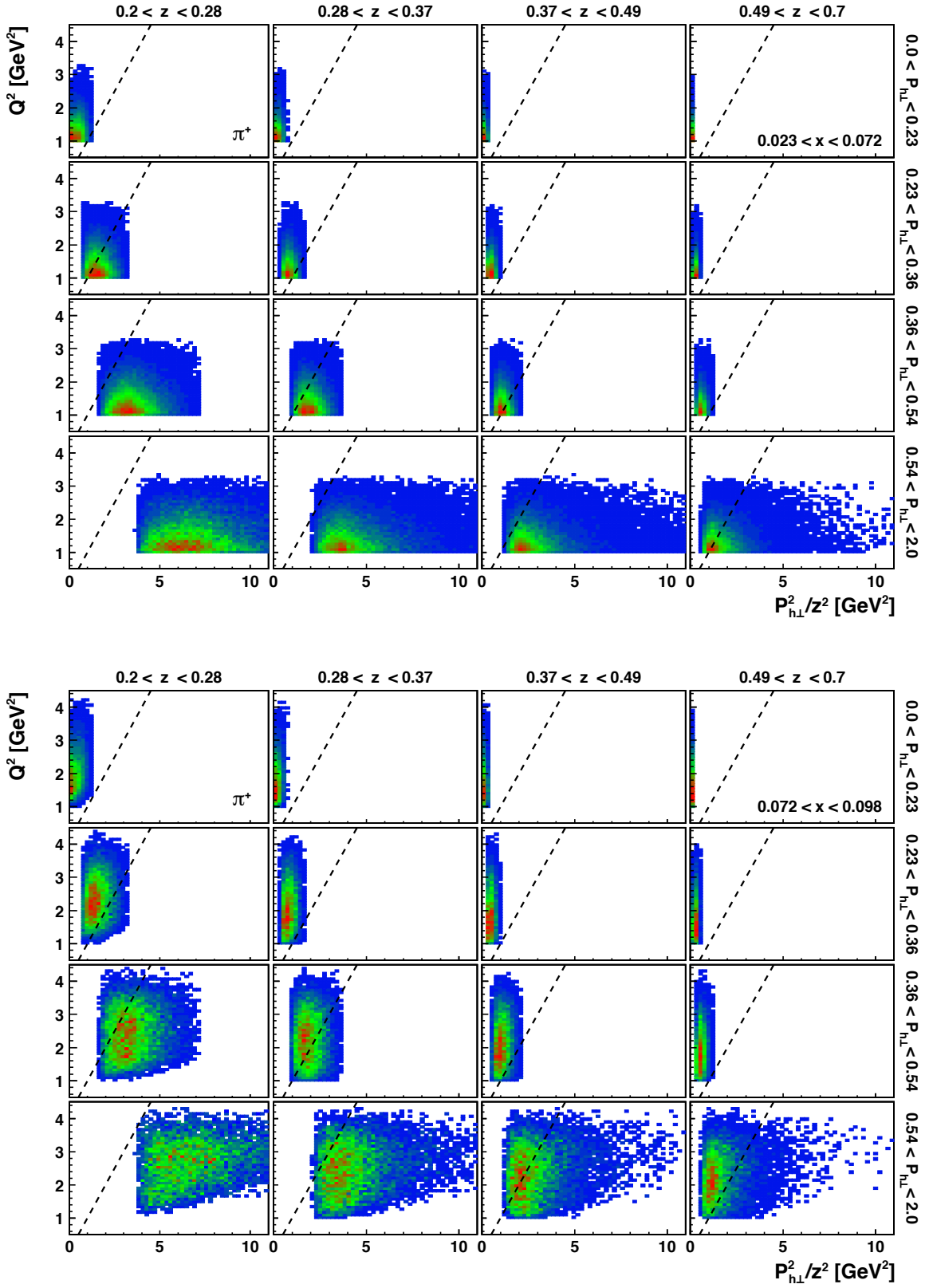

Figure 7. The distribution of π^+ events in the Q^2–$P_{h\perp}^2/z^2$ plane for the various (z, $P_{h\perp}$) bins of the first (top) and second (bottom) x bin. The $Q^2 = P_{h\perp}^2/z^2$ boundaries are indicated by dashed lines.

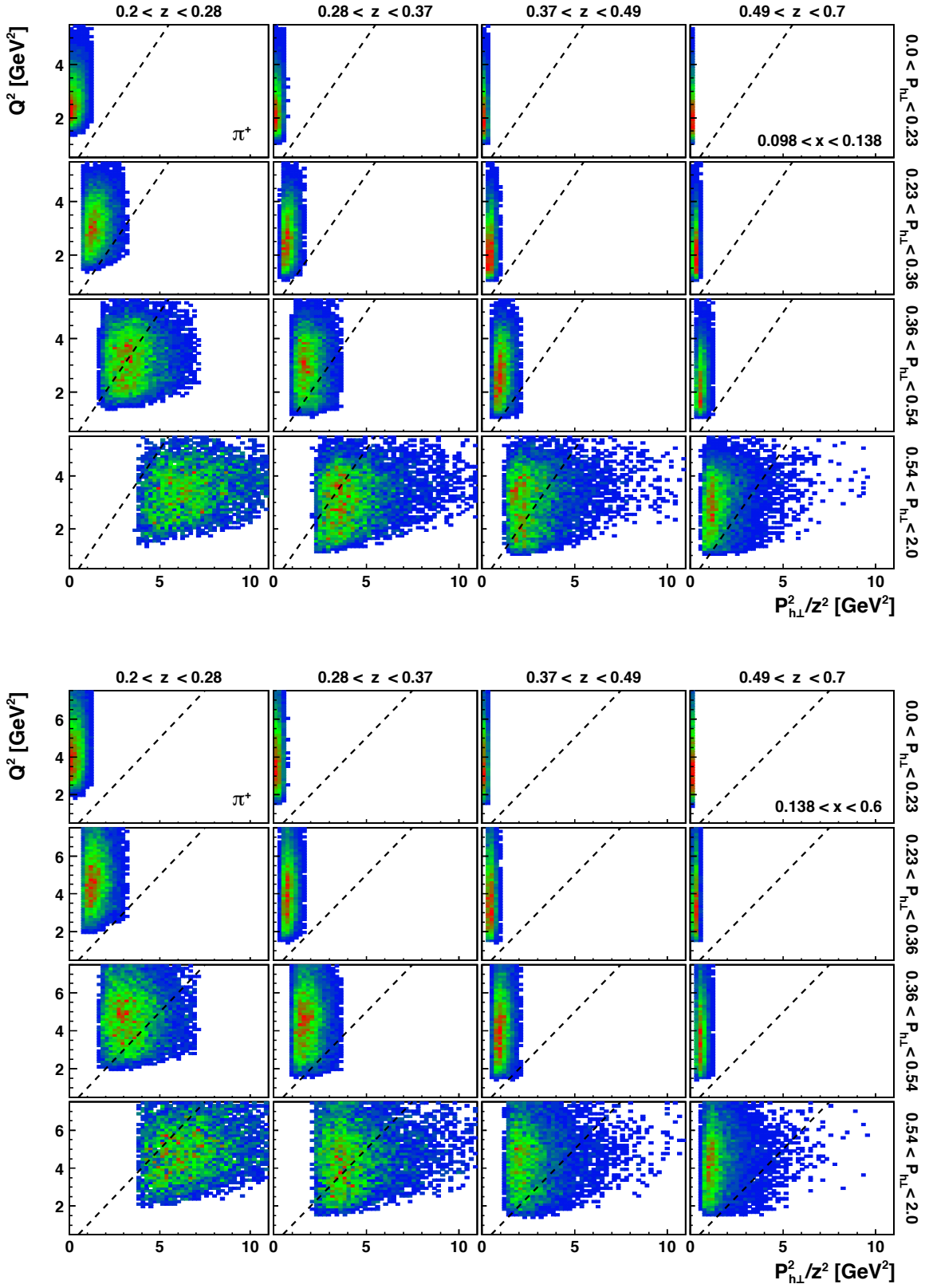

Figure 8. The distribution of π^+ events in the Q^2–$P_{h\perp}^2/z^2$ plane for the various (z, $P_{h\perp}$) bins of the third (top) and highest (bottom) x bin. The $Q^2 = P_{h\perp}^2/z^2$ boundaries are indicated by dashed lines.

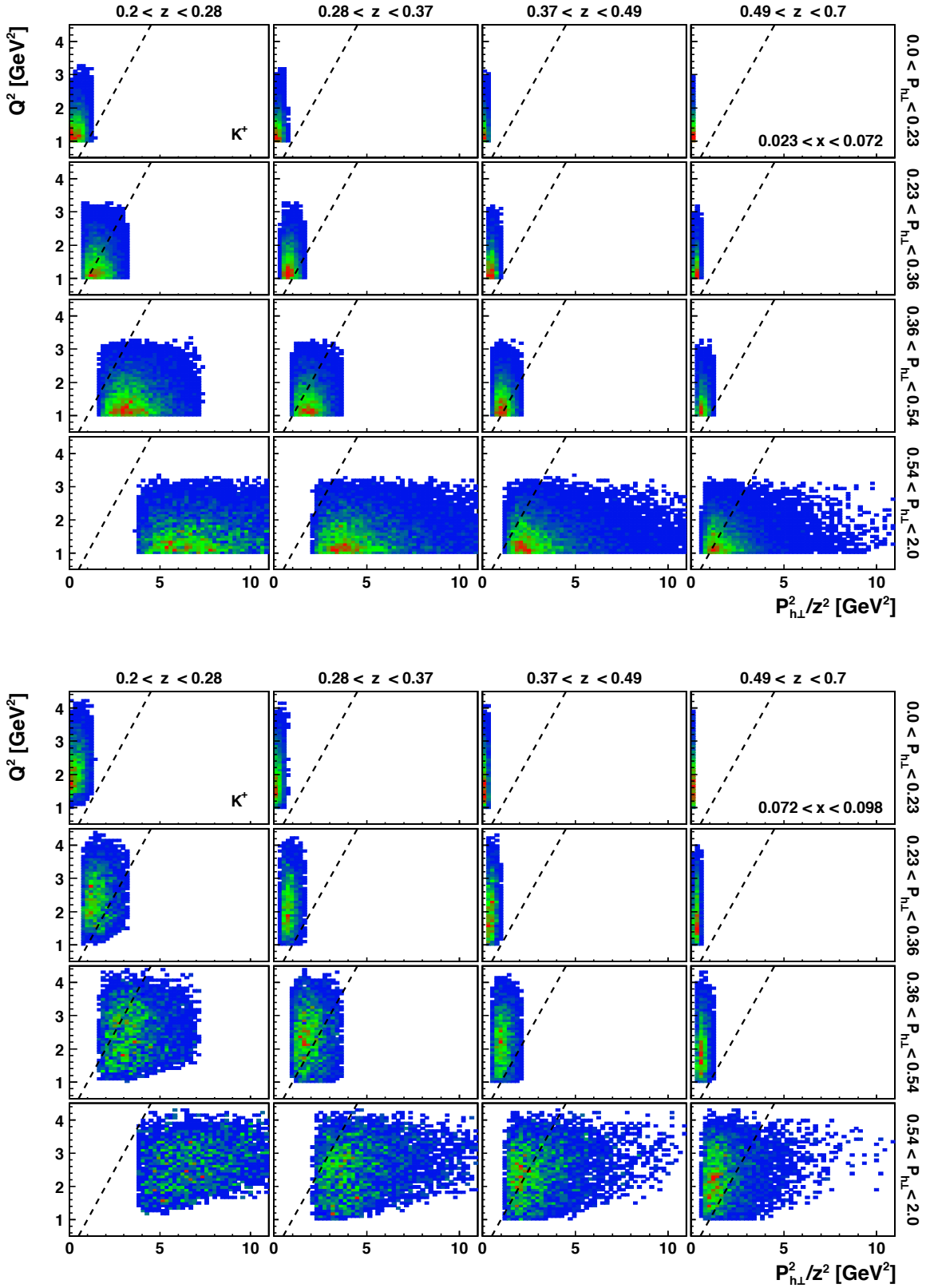

Figure 9. The distribution of K^+ events in the Q^2–$P_{h\perp}^2/z^2$ plane for the various (z, $P_{h\perp}$) bins of the first (top) and second (bottom) x bin. The $Q^2 = P_{h\perp}^2/z^2$ boundaries are indicated by dashed lines.

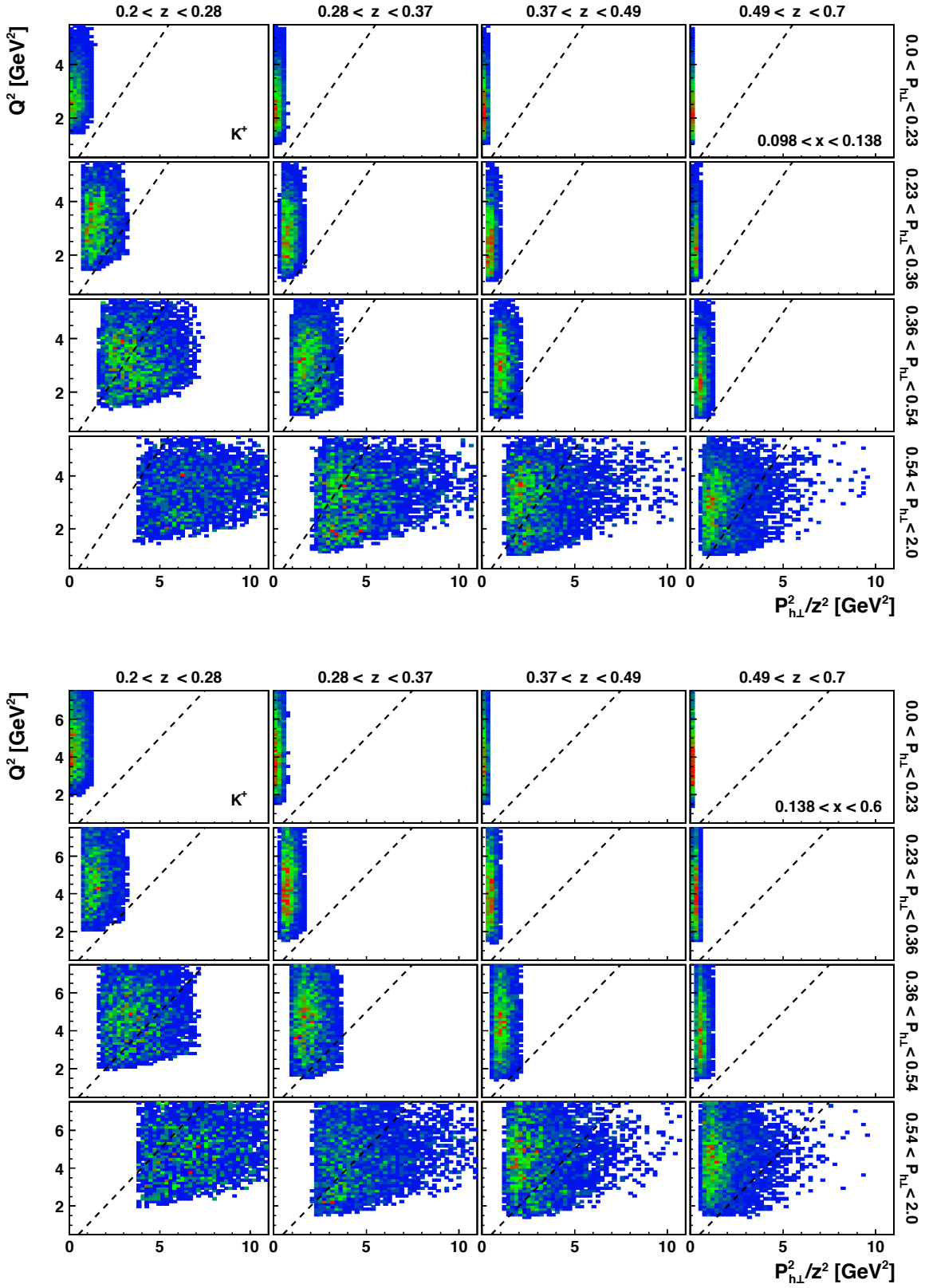

Figure 10. The distribution of K^+ events in the Q^2–$P_{h\perp}^2/z^2$ plane for the various (z, $P_{h\perp}$) bins of the third (top) and highest (bottom) x bin. The $Q^2 = P_{h\perp}^2/z^2$ boundaries are indicated by dashed lines.

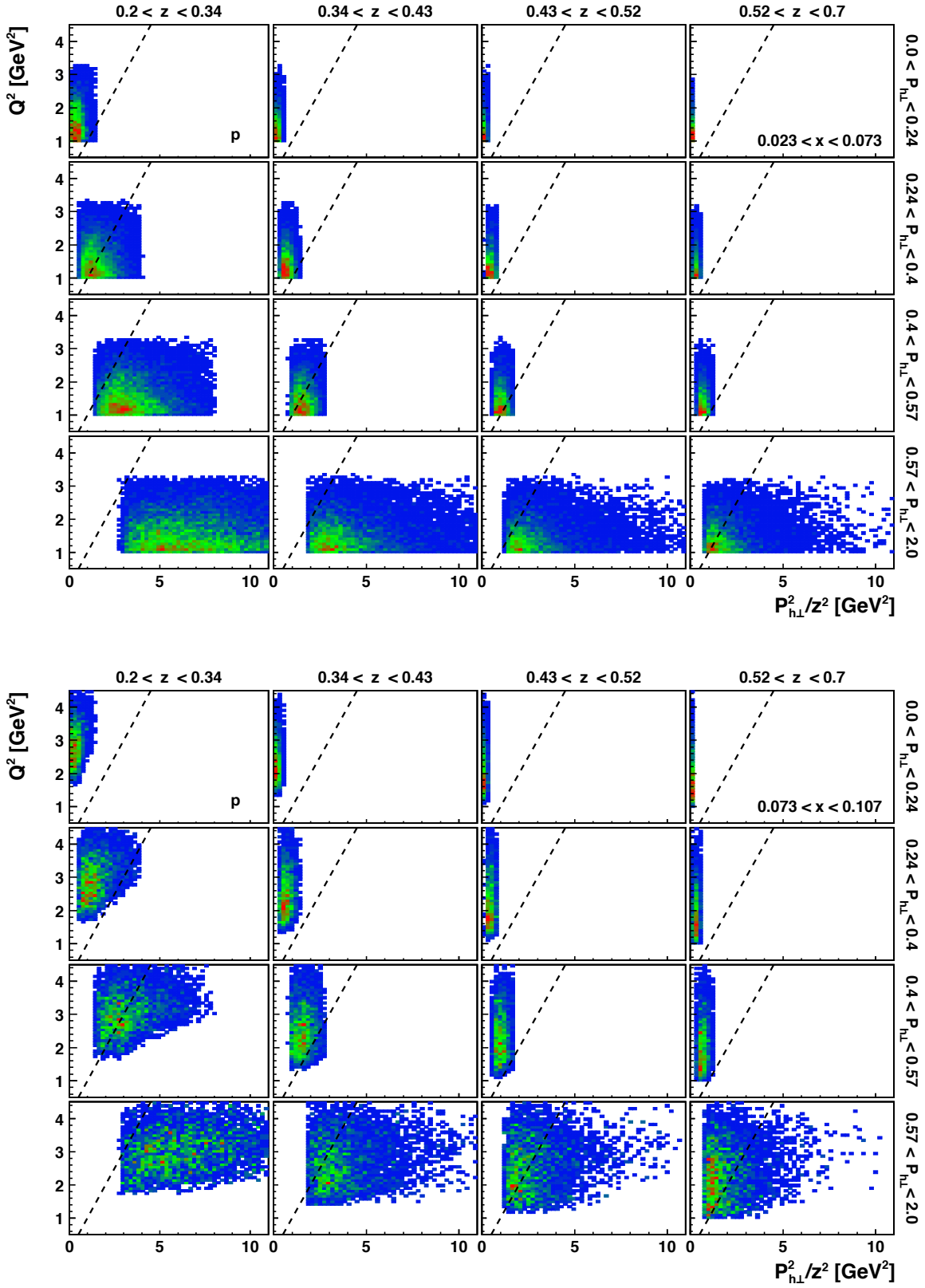

Figure 11. The distribution of proton events in the Q^2–$P_{h\perp}^2/z^2$ plane for the various (z, $P_{h\perp}$) bins of the first (top) and second (bottom) x bin. The $Q^2 = P_{h\perp}^2/z^2$ boundaries are indicated by dashed lines.

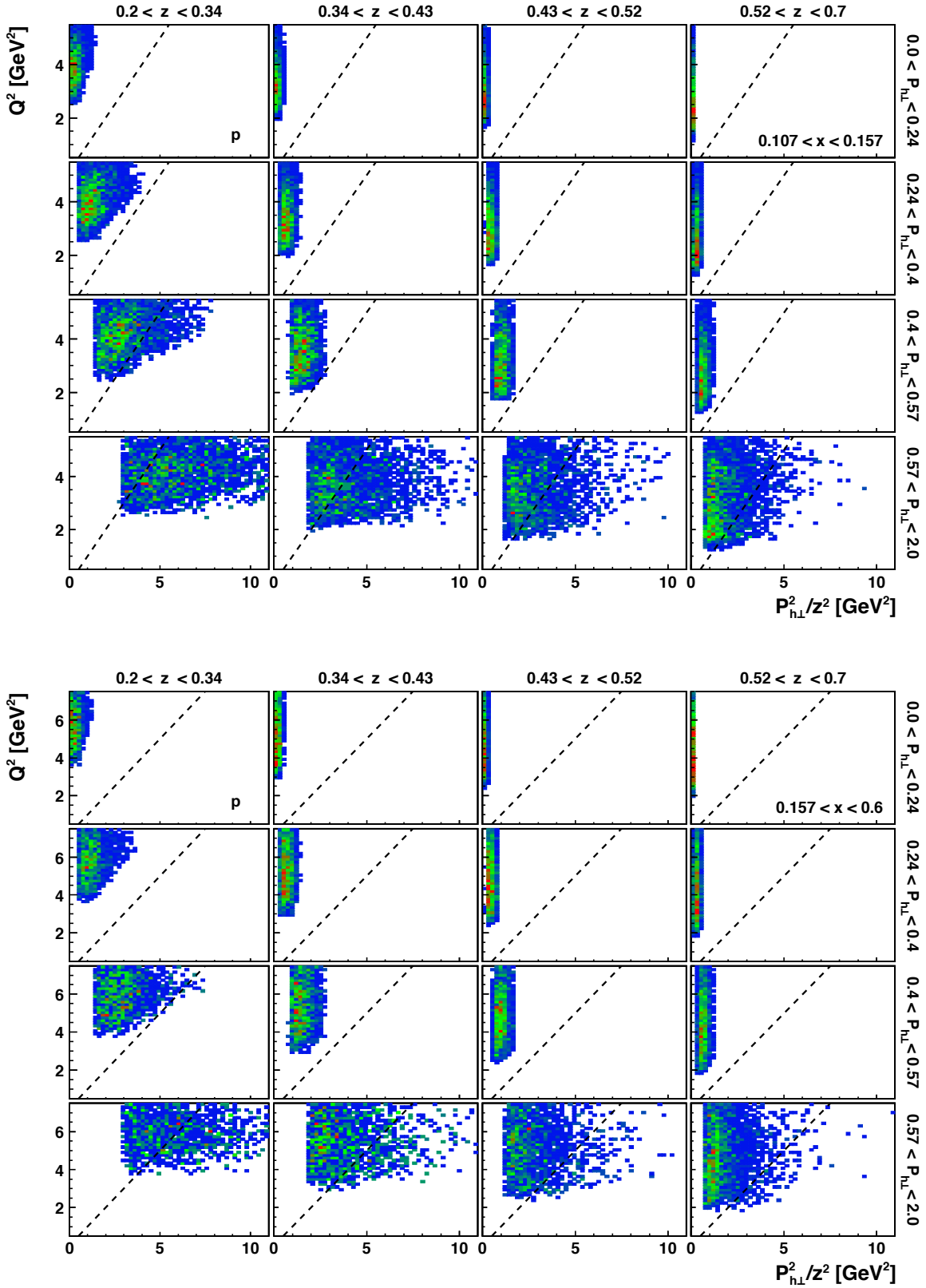

Figure 12. The distribution of proton events in the Q^2–$P_{h\perp}^2/z^2$ plane for the various (z, $P_{h\perp}$) bins of the third (top) and highest (bottom) x bin. The $Q^2 = P_{h\perp}^2/z^2$ boundaries are indicated by dashed lines.

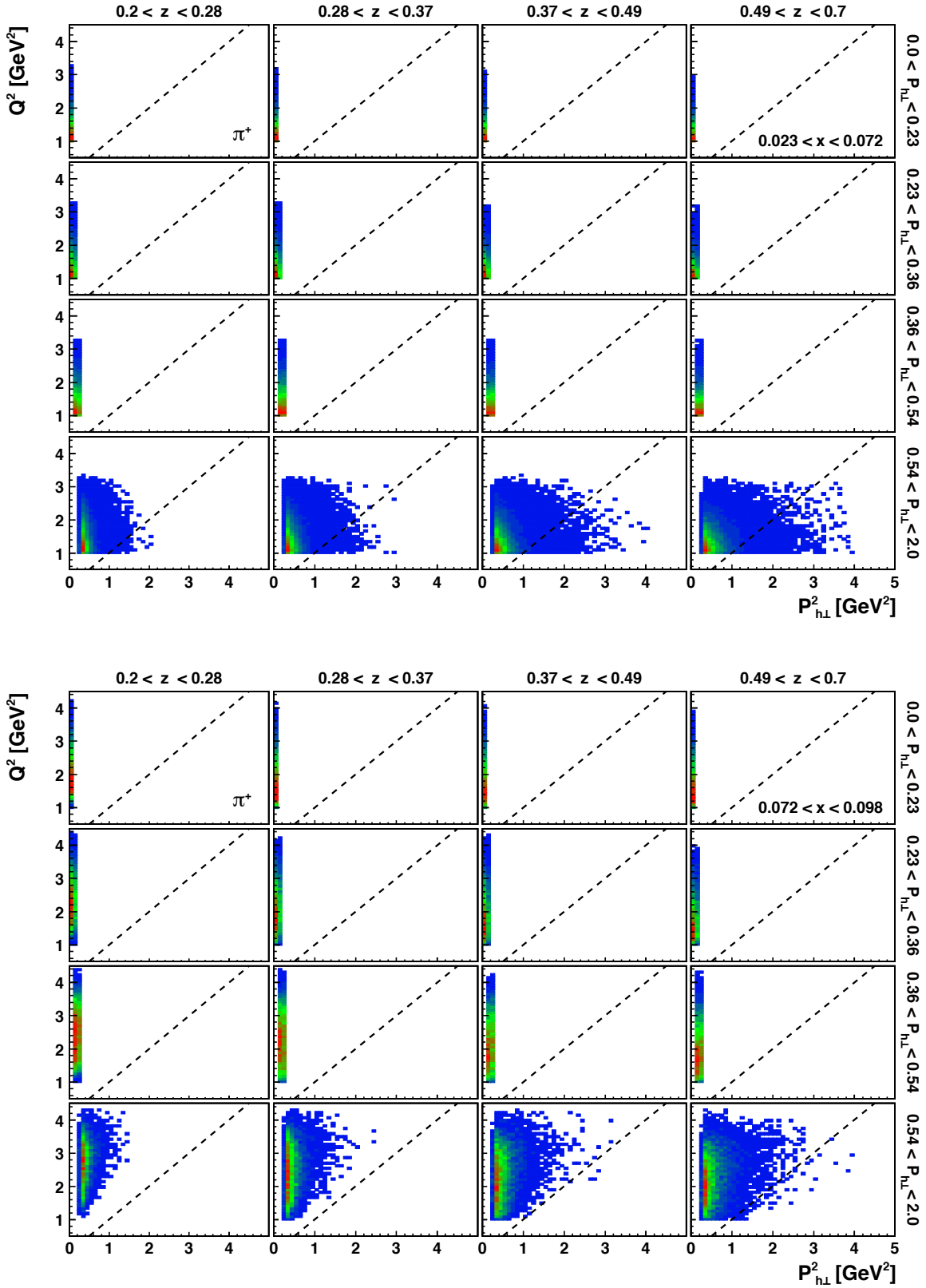

Figure 13. The distribution of π^+ events in the Q^2–$P_{h\perp}^2$ plane for the various (z, $P_{h\perp}$) bins of the first (top) and second (bottom) x bin. The $Q^2 = P_{h\perp}^2$ boundaries are indicated by dashed lines.

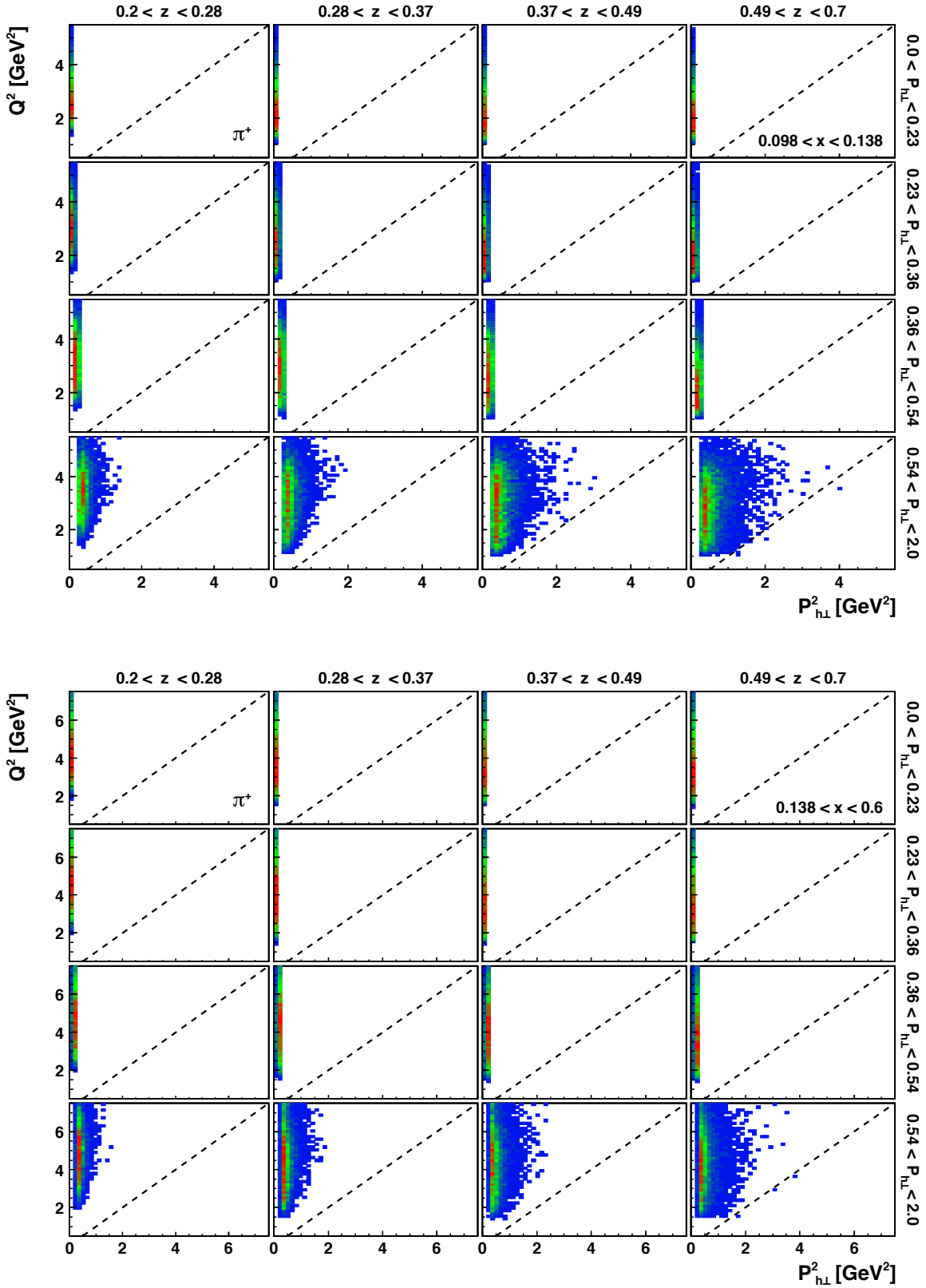

Figure 14. The distribution of π^+ events in the Q^2–$P_{h\perp}^2$ plane for the various (z, $P_{h\perp}$) bins of the third (top) and highest (bottom) x bin. The $Q^2 = P_{h\perp}^2$ boundaries are indicated by dashed lines.

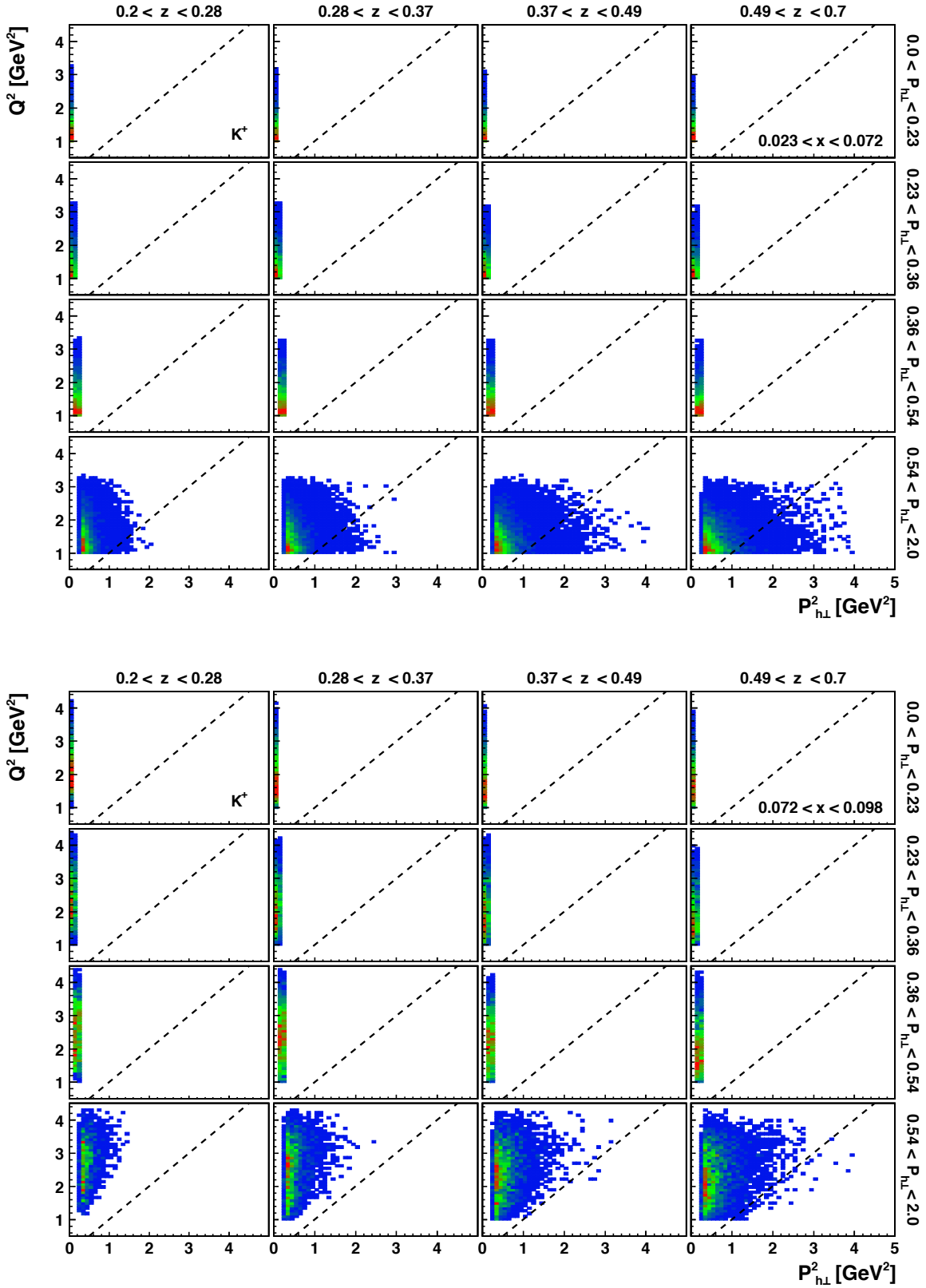

Figure 15. The distribution of K^+ events in the Q^2–$P_{h\perp}^2$ plane for the various (z, $P_{h\perp}$) bins of the first (top) and second (bottom) x bin. The $Q^2 = P_{h\perp}^2$ boundaries are indicated by dashed lines.

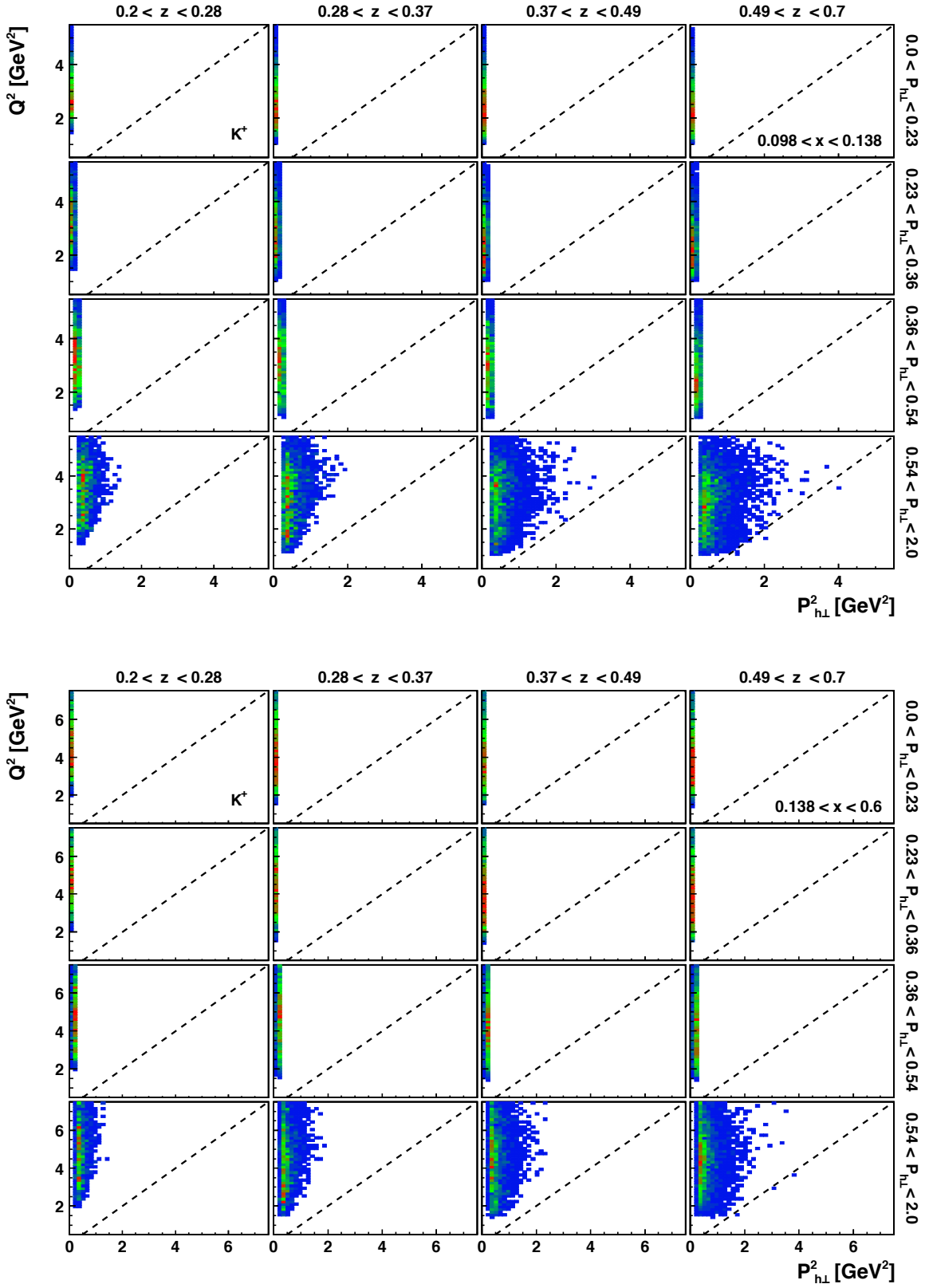

Figure 16. The distribution of K^+ events in the Q^2–$P_{h\perp}^2$ plane for the various (z, $P_{h\perp}$) bins of the third (top) and highest (bottom) x bin. The $Q^2 = P_{h\perp}^2$ boundaries are indicated by dashed lines.

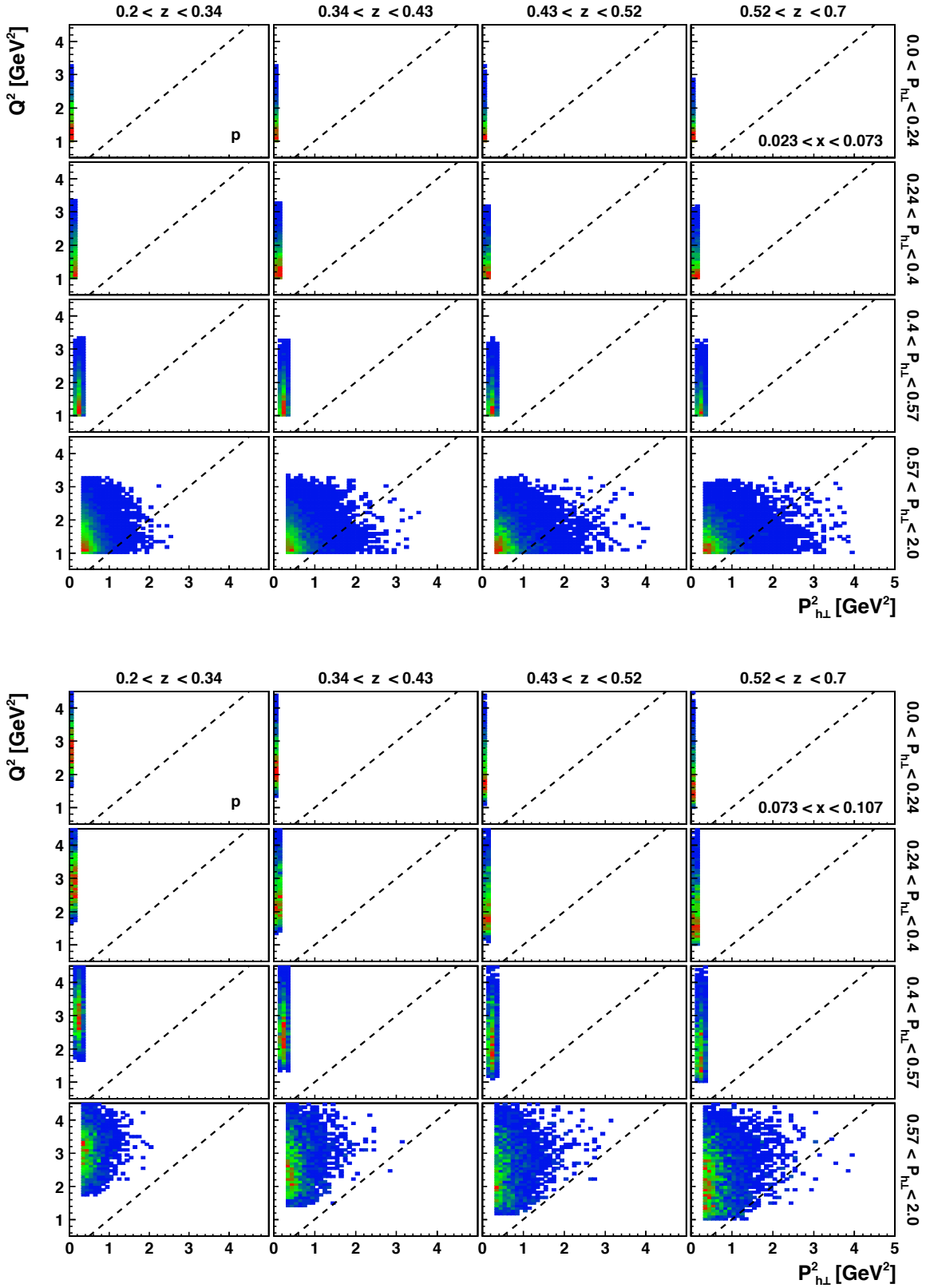

Figure 17. The distribution of proton events in the Q^2–$P_{h\perp}^2$ plane for the various (z, $P_{h\perp}$) bins of the first (top) and second (bottom) x bin. The $Q^2 = P_{h\perp}^2$ boundaries are indicated by dashed lines.

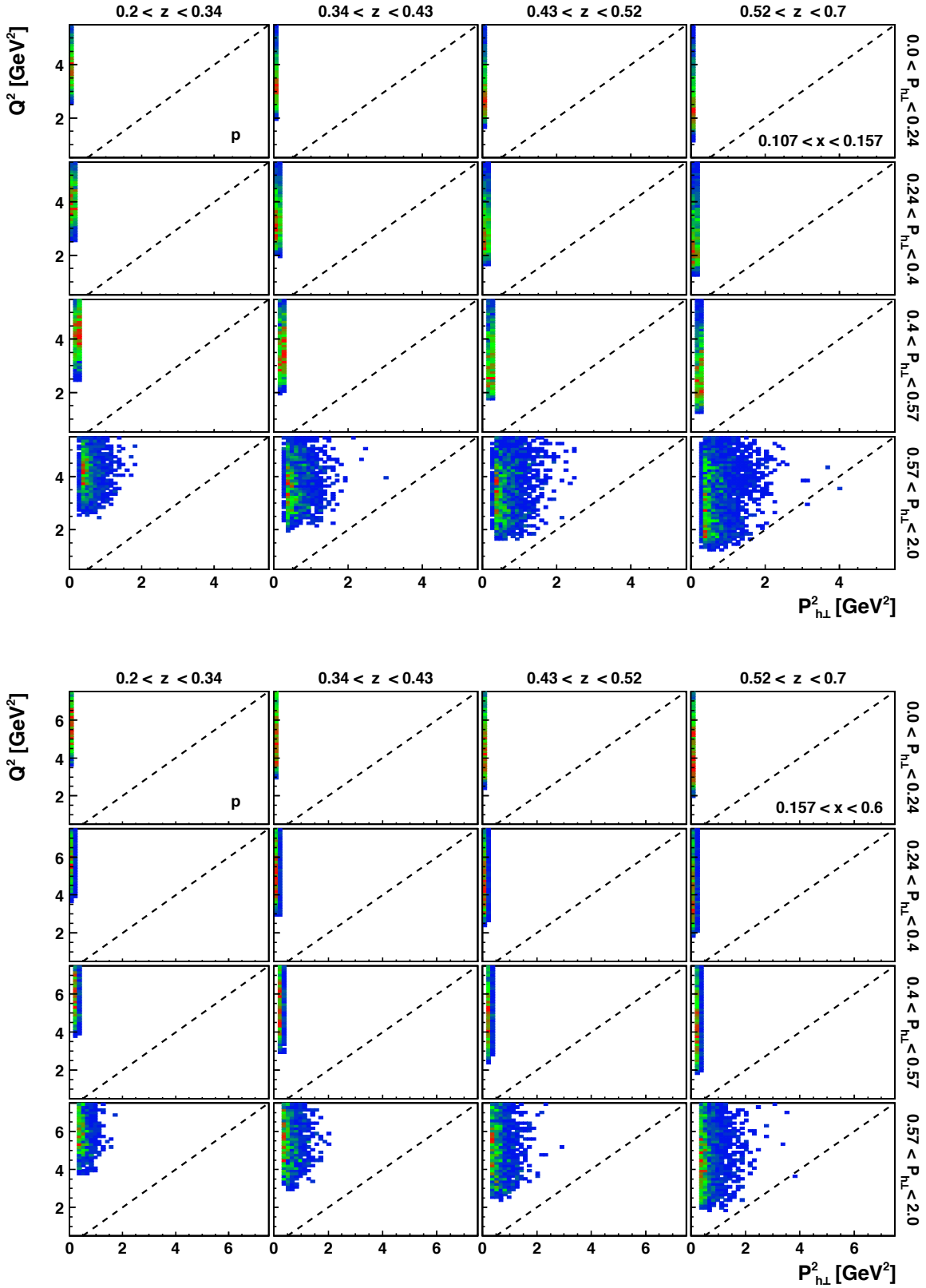

Figure 18. The distribution of proton events in the Q^2–$P_{h\perp}^2$ plane for the various (z, $P_{h\perp}$) bins of the third (top) and highest (bottom) x bin. The $Q^2 = P_{h\perp}^2$ boundaries are indicated by dashed lines.

4 Two-dimensional distributions in various semi-inclusive DIS kiematics

In this section, various supplemental figures of two-dimensional event distributions in z, x_F, W^2, and M_X^2 are presented, where M_X^2 is the missing-mass of the unobserved final state. Especially strong correlations are present between z and x_F (figure 19), but also between M_X^2 and z in the region of large z (figure 22), as can be expected from the reduction of phase space at large values of z.

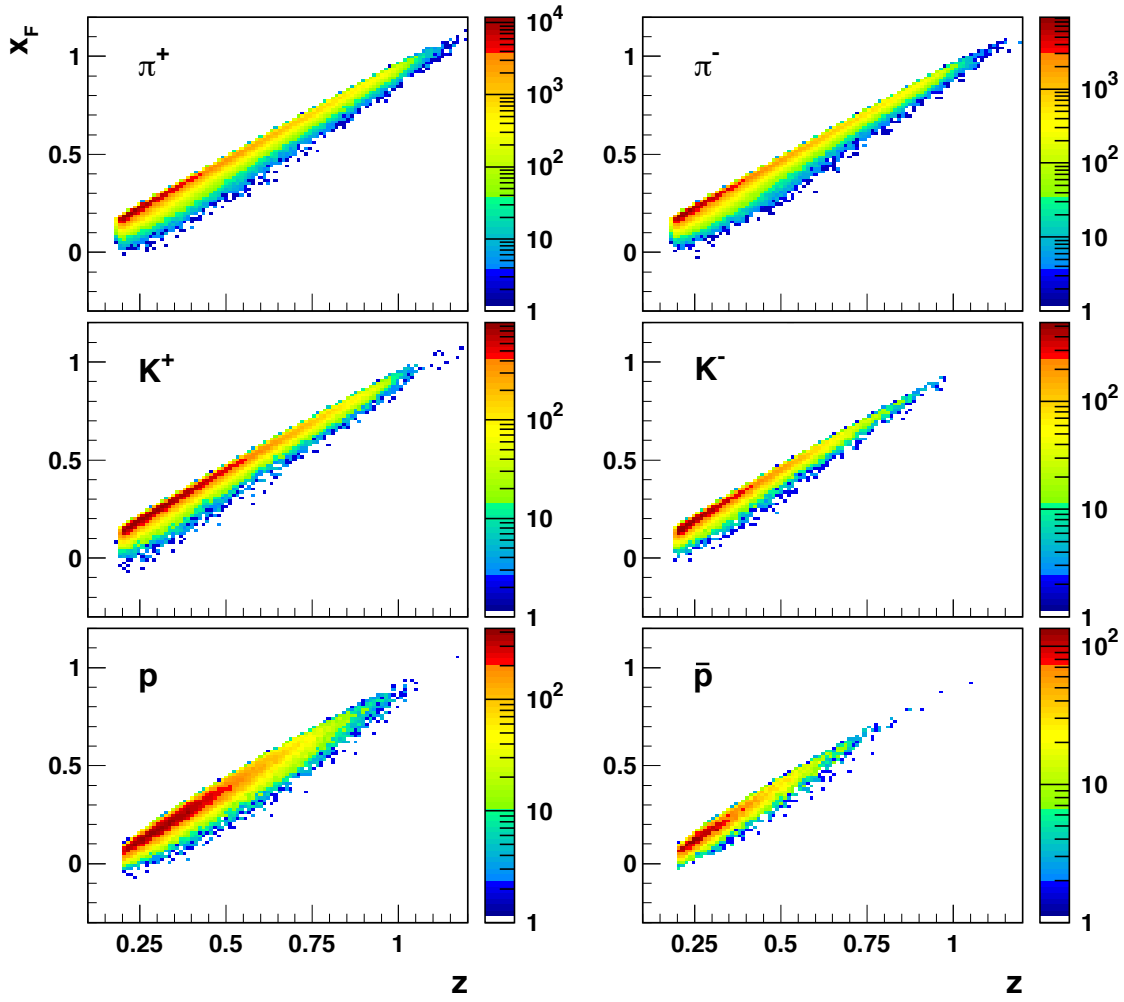

Figure 19. The distribution of charged-hadron events in the x_F–z plane for the various hadron types as labeled.

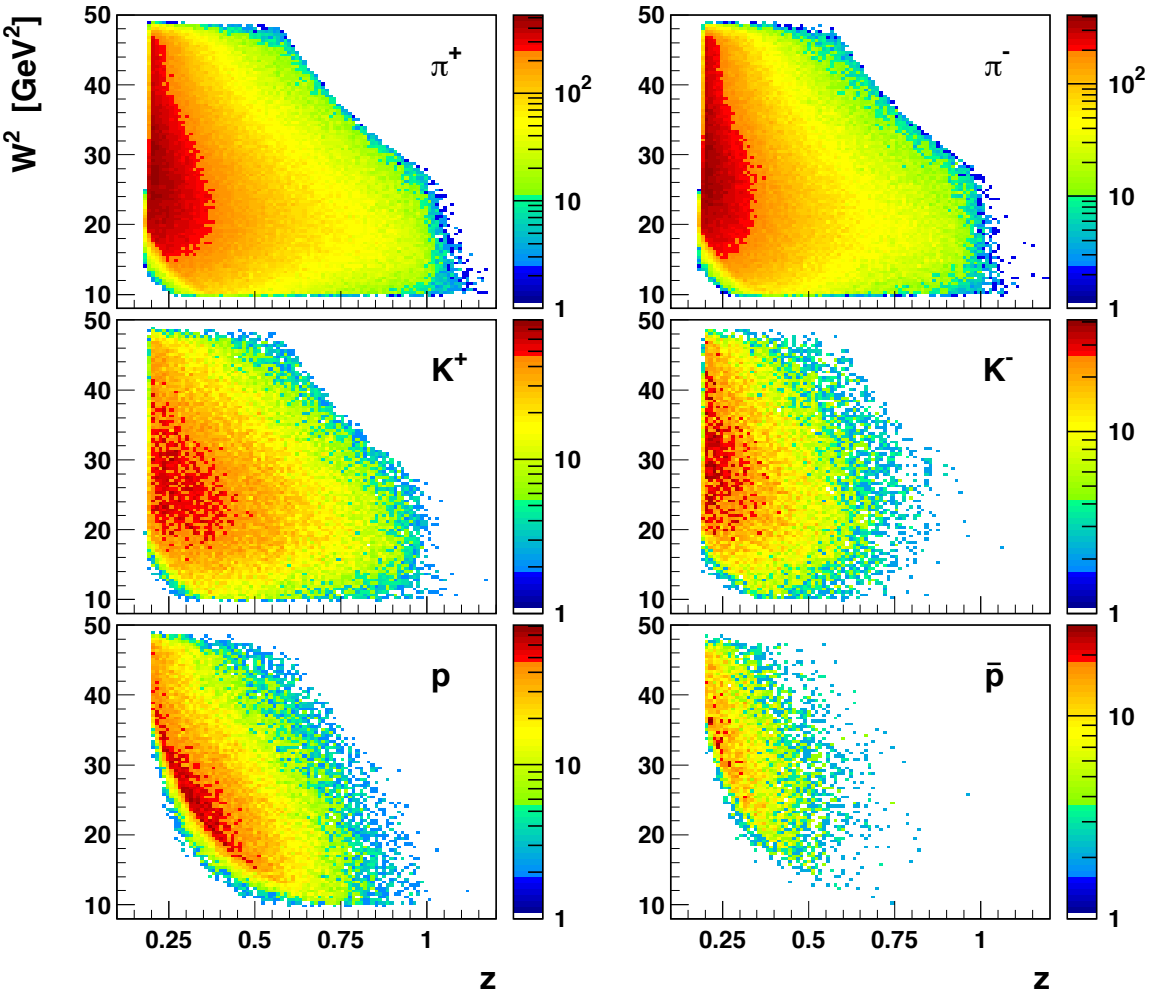

Figure 20. The distribution of charged-hadron events in the W^2–z plane for the various hadron types as labeled.

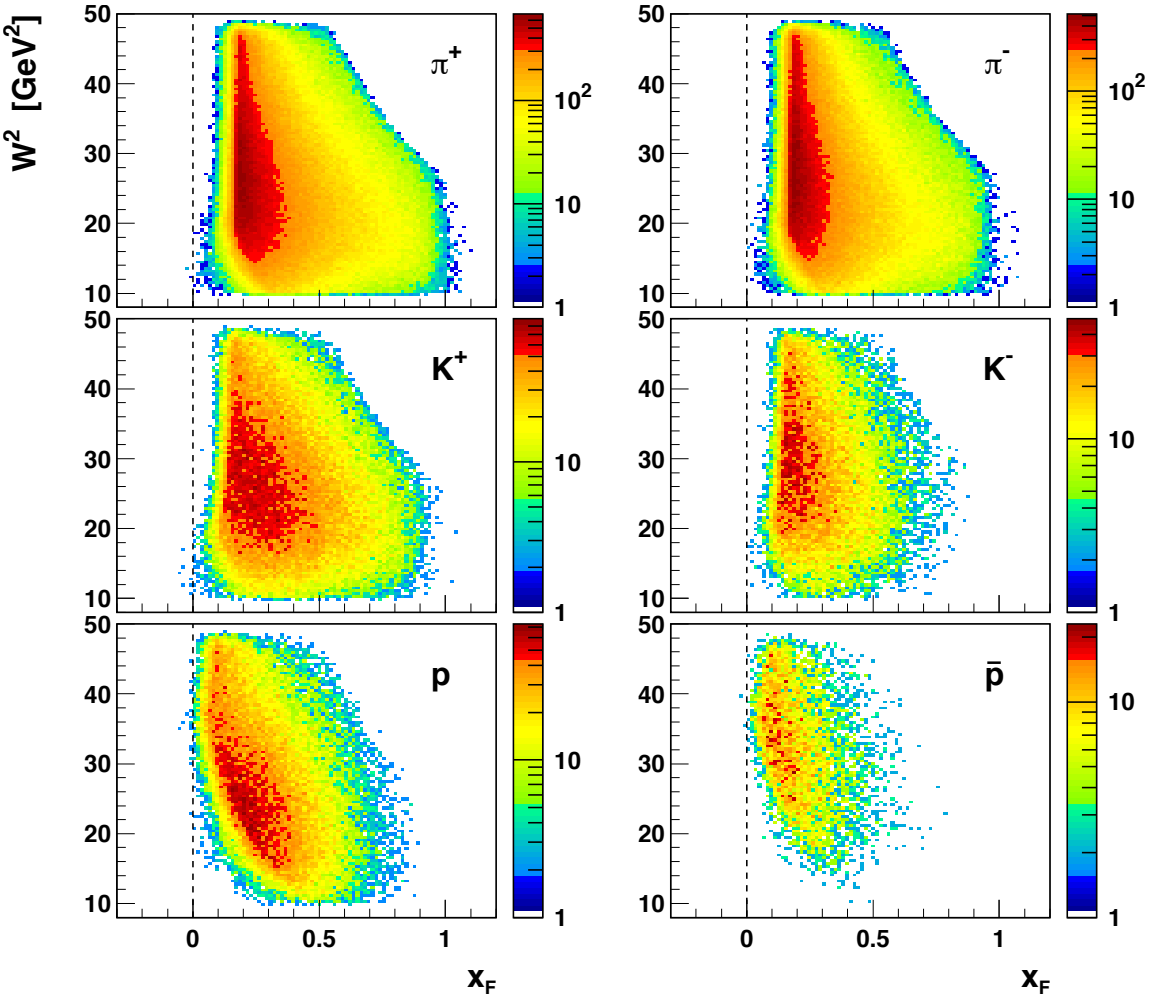

Figure 21. The distribution of charged-hadron events in the W^2–x_F plane for the various hadron types as labeled.

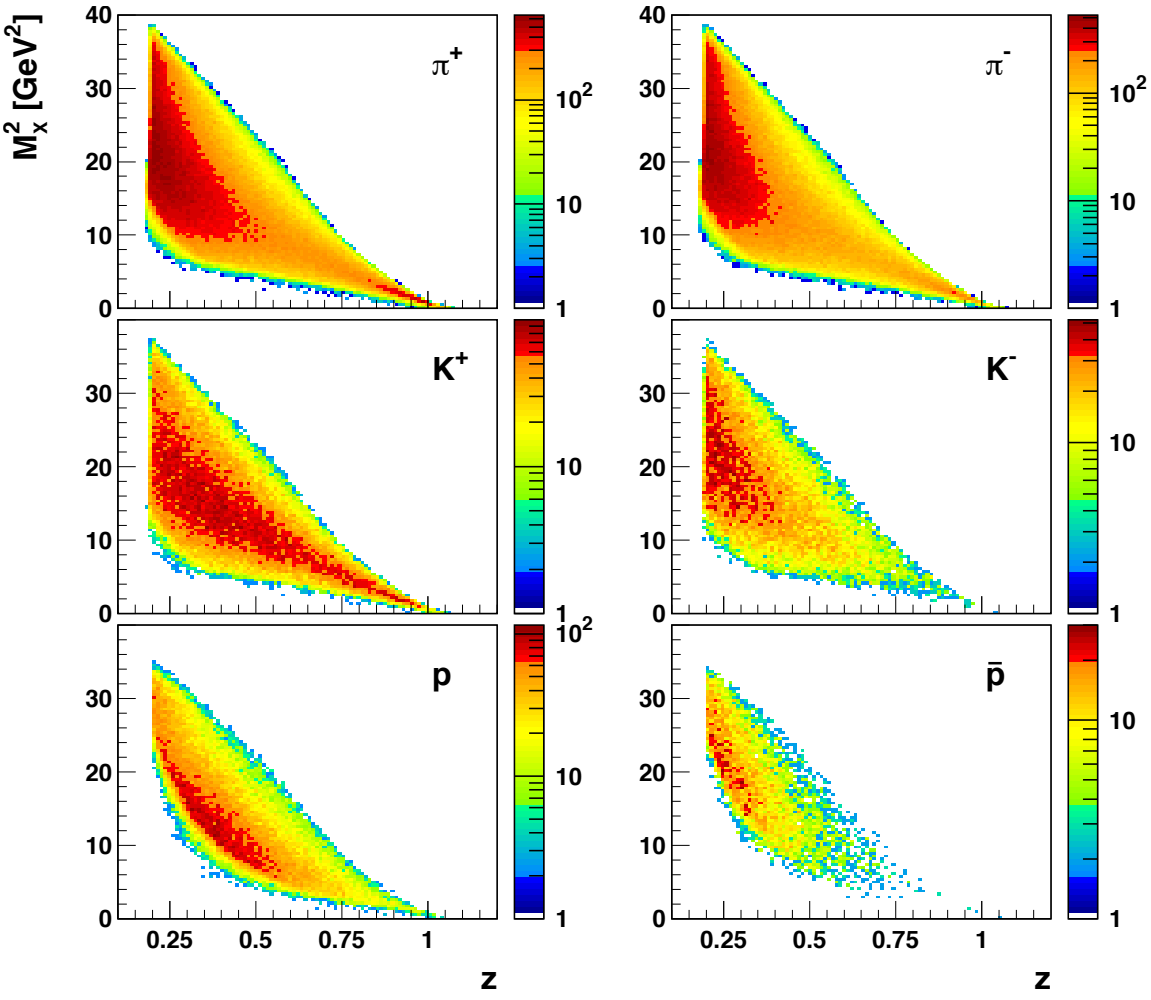

Figure 22. The distribution of charged-hadron events in the M_X^2–z plane for the various hadron types as labeled.

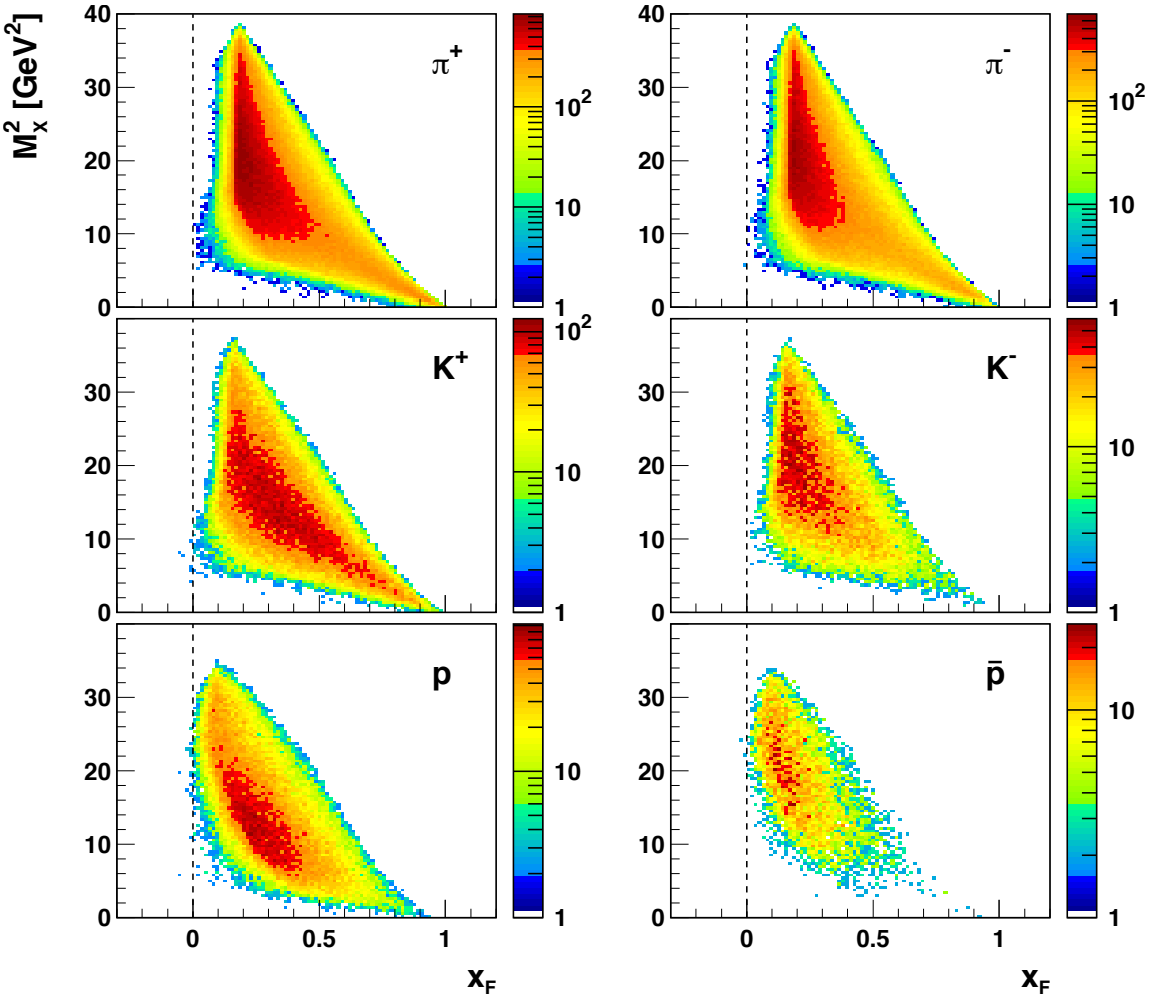

Figure 23. The distribution of charged-hadron events in the M_X^2–x_F plane for the various hadron types as labeled.

5 Tabulation of results

5.1 Collins asymmetry

Kinematic bin		Average kinematics						π^+	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(\phi + \phi_S)/\epsilon \rangle_{U\perp}$	$2\langle \sin(\phi + \phi_S) \rangle_{U\perp}$
	0.023 – 0.046	1.29	0.036	0.702	0.336	0.486	0.526	0.0113 ± 0.0120 ± 0.0020	0.0103 ± 0.0069 ± 0.0008
	0.046 – 0.067	1.64	0.056	0.567	0.356	0.408	0.700	0.0061 ± 0.0094 ± 0.0002	0.0028 ± 0.0067 ± 0.0004
	0.067 – 0.082	1.98	0.074	0.516	0.366	0.375	0.752	0.0062 ± 0.0113 ± 0.0011	0.0034 ± 0.0087 ± 0.0004
x	0.082 – 0.105	2.34	0.093	0.489	0.374	0.358	0.778	0.0106 ± 0.0098 ± 0.0040	0.0096 ± 0.0077 ± 0.0024
	0.082 – 0.105	2.34	0.093	0.489	0.374	0.358	0.778	0.0106 ± 0.0098 ± 0.0040	0.0096 ± 0.0077 ± 0.0024
	0.105 – 0.134	2.87	0.118	0.469	0.379	0.348	0.796	0.0315 ± 0.0101 ± 0.0026	0.0265 ± 0.0080 ± 0.0011
	0.134 – 0.186	3.69	0.157	0.456	0.379	0.342	0.811	0.0352 ± 0.0100 ± 0.0014	0.0271 ± 0.0079 ± 0.0025
	0.186 – 0.600	5.71	0.254	0.437	0.375	0.343	0.832	0.0297 ± 0.0115 ± 0.0083	0.0253 ± 0.0089 ± 0.0077
	0.200 – 0.260	2.44	0.087	0.594	0.229	0.344	0.661	0.0126 ± 0.0074 ± 0.0087	0.0086 ± 0.0052 ± 0.0063
	0.260 – 0.320	2.46	0.094	0.556	0.289	0.371	0.702	0.0144 ± 0.0080 ± 0.0100	0.0112 ± 0.0058 ± 0.0075
	0.320 – 0.380	2.45	0.098	0.533	0.349	0.394	0.725	0.0122 ± 0.0090 ± 0.0081	0.0090 ± 0.0068 ± 0.0065
	0.380 – 0.450	2.45	0.100	0.520	0.413	0.418	0.740	0.0341 ± 0.0097 ± 0.0066	0.0225 ± 0.0075 ± 0.0043
z	0.450 – 0.520	2.44	0.101	0.508	0.483	0.441	0.753	0.0106 ± 0.0114 ± 0.0049	0.0144 ± 0.0090 ± 0.0018
	0.450 – 0.520	2.44	0.101	0.508	0.483	0.441	0.753	0.0106 ± 0.0114 ± 0.0049	0.0144 ± 0.0090 ± 0.0018
	0.520 – 0.600	2.43	0.102	0.499	0.558	0.460	0.763	0.0309 ± 0.0126 ± 0.0028	0.0254 ± 0.0101 ± 0.0008
	0.600 – 0.700	2.41	0.104	0.481	0.647	0.466	0.785	0.0428 ± 0.0135 ± 0.0015	0.0379 ± 0.0111 ± 0.0039
	0.700 – 0.760	2.41	0.107	0.457	0.729	0.453	0.813	0.0265 ± 0.0203 ± 0.0005	0.0258 ± 0.0171 ± 0.0058
	0.760 – 0.840	2.35	0.108	0.434	0.798	0.433	0.837	0.0542 ± 0.0200 ± 0.0052	0.0507 ± 0.0172 ± 0.0006
	0.840 – 1.200	2.31	0.116	0.394	0.916	0.376	0.872	0.0786 ± 0.0173 ± 0.0124	0.0761 ± 0.0151 ± 0.0065
	0.000 – 0.170	2.56	0.110	0.460	0.341	0.110	0.813	0.0167 ± 0.0085 ± 0.0039	0.0138 ± 0.0070 ± 0.0031
	0.170 – 0.250	2.56	0.108	0.489	0.350	0.211	0.779	0.0277 ± 0.0096 ± 0.0109	0.0237 ± 0.0079 ± 0.0095
	0.250 – 0.310	2.52	0.103	0.514	0.354	0.280	0.750	0.0366 ± 0.0113 ± 0.0112	0.0259 ± 0.0091 ± 0.0085
$P_{h\perp}$	0.310 – 0.380	2.46	0.097	0.540	0.355	0.345	0.721	0.0146 ± 0.0105 ± 0.0084	0.0102 ± 0.0081 ± 0.0039
	0.310 – 0.380	2.46	0.097	0.540	0.355	0.345	0.721	0.0146 ± 0.0105 ± 0.0084	0.0102 ± 0.0081 ± 0.0039
[GeV]	0.380 – 0.520	2.39	0.090	0.570	0.356	0.446	0.686	0.0203 ± 0.0080 ± 0.0065	0.0115 ± 0.0057 ± 0.0009
	0.520 – 0.690	2.34	0.084	0.601	0.373	0.594	0.648	0.0212 ± 0.0096 ± 0.0064	0.0125 ± 0.0065 ± 0.0004
	0.690 – 2.000	2.30	0.076	0.642	0.429	0.849	0.597	0.0436 ± 0.0127 ± 0.0057	0.0241 ± 0.0080 ± 0.0005

Table 2. One-dimensionally binned SFA and CSA amplitudes of the $\sin(\phi + \phi_S)$ modulation for π^+ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin		Average kinematics						π^0	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(\phi+\phi_S)/\epsilon \rangle_{U\perp}$	$2\langle \sin(\phi+\phi_S) \rangle_{U\perp}$
x	0.023 – 0.046	1.30	0.036	0.712	0.325	0.492	0.512	0.0097 ± 0.0366 ± 0.0035	0.0035 ± 0.0219 ± 0.0035
	0.046 – 0.067	1.72	0.056	0.597	0.352	0.406	0.665	0.0057 ± 0.0287 ± 0.0019	-0.0074 ± 0.0205 ± 0.0039
	0.067 – 0.082	2.14	0.074	0.558	0.366	0.374	0.708	-0.0226 ± 0.0353 ± 0.0030	-0.0229 ± 0.0262 ± 0.0036
	0.082 – 0.105	2.58	0.093	0.538	0.372	0.353	0.731	0.0362 ± 0.0303 ± 0.0042	0.0224 ± 0.0231 ± 0.0029
	0.082 – 0.105	2.58	0.093	0.538	0.372	0.353	0.731	0.0362 ± 0.0303 ± 0.0042	0.0224 ± 0.0231 ± 0.0029
	0.105 – 0.134	3.19	0.118	0.522	0.378	0.338	0.749	-0.0434 ± 0.0324 ± 0.0010	-0.0381 ± 0.0250 ± 0.0023
	0.134 – 0.186	4.10	0.156	0.507	0.380	0.323	0.766	-0.0006 ± 0.0303 ± 0.0026	-0.0005 ± 0.0237 ± 0.0024
	0.186 – 0.600	6.14	0.249	0.479	0.386	0.326	0.797	-0.0415 ± 0.0343 ± 0.0014	-0.0321 ± 0.0263 ± 0.0023
z	0.200 – 0.260	2.45	0.078	0.648	0.229	0.337	0.598	-0.0554 ± 0.0341 ± 0.0156	-0.0433 ± 0.0216 ± 0.0095
	0.260 – 0.320	2.49	0.085	0.609	0.289	0.372	0.645	0.0550 ± 0.0278 ± 0.0158	0.0370 ± 0.0188 ± 0.0095
	0.320 – 0.380	2.52	0.090	0.581	0.348	0.401	0.679	0.0171 ± 0.0283 ± 0.0170	0.0037 ± 0.0202 ± 0.0101
	0.380 – 0.450	2.53	0.095	0.558	0.413	0.427	0.705	-0.0254 ± 0.0261 ± 0.0173	-0.0256 ± 0.0196 ± 0.0104
	0.450 – 0.520	2.55	0.099	0.537	0.483	0.450	0.728	-0.0540 ± 0.0275 ± 0.0158	-0.0421 ± 0.0215 ± 0.0094
	0.450 – 0.520	2.55	0.099	0.537	0.483	0.450	0.728	-0.0540 ± 0.0275 ± 0.0158	-0.0421 ± 0.0215 ± 0.0094
	0.520 – 0.600	2.57	0.102	0.517	0.557	0.469	0.750	-0.0189 ± 0.0285 ± 0.0164	-0.0091 ± 0.0232 ± 0.0094
	0.600 – 0.700	2.59	0.106	0.496	0.645	0.483	0.774	0.0018 ± 0.0294 ± 0.0168	-0.0051 ± 0.0244 ± 0.0097
	0.700 – 0.760	2.61	0.112	0.472	0.728	0.494	0.799	0.0505 ± 0.0450 ± 0.0155	0.0462 ± 0.0376 ± 0.0105
	0.760 – 0.840	2.66	0.116	0.457	0.796	0.488	0.815	-0.0014 ± 0.0483 ± 0.0186	0.0000 ± 0.0408 ± 0.0104
	0.840 – 1.200	2.56	0.121	0.418	0.908	0.478	0.849	0.1224 ± 0.0536 ± 0.0264	0.0993 ± 0.0454 ± 0.0174
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.82	0.114	0.481	0.338	0.111	0.799	0.0248 ± 0.0315 ± 0.0105	0.0186 ± 0.0267 ± 0.0045
	0.170 – 0.250	2.69	0.103	0.529	0.340	0.211	0.745	-0.0442 ± 0.0335 ± 0.0122	-0.0336 ± 0.0284 ± 0.0074
	0.250 – 0.310	2.59	0.095	0.563	0.343	0.280	0.705	-0.0570 ± 0.0377 ± 0.0105	-0.0557 ± 0.0322 ± 0.0037
	0.310 – 0.380	2.49	0.088	0.591	0.347	0.345	0.668	-0.0072 ± 0.0378 ± 0.0193	-0.0098 ± 0.0316 ± 0.0121
	0.310 – 0.380	2.49	0.088	0.591	0.347	0.345	0.668	-0.0072 ± 0.0378 ± 0.0193	-0.0098 ± 0.0316 ± 0.0121
	0.380 – 0.520	2.39	0.081	0.624	0.353	0.446	0.625	0.0118 ± 0.0254 ± 0.0114	-0.0105 ± 0.0191 ± 0.0036
	0.520 – 0.690	2.30	0.074	0.652	0.371	0.595	0.587	-0.0235 ± 0.0250 ± 0.0106	-0.0114 ± 0.0174 ± 0.0032
	0.690 – 2.000	2.27	0.071	0.675	0.428	0.849	0.554	-0.0115 ± 0.0267 ± 0.0117	-0.0154 ± 0.0170 ± 0.0034

Table 3. One-dimensionally binned SFA and CSA amplitudes of the $\sin(\phi+\phi_S)$ modulation for π^0 as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin		Average kinematics						π^-	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(\phi+\phi_S)/\epsilon \rangle_{U\perp}$	$2\langle \sin(\phi+\phi_S) \rangle_{U\perp}$
x	0.023 – 0.046	1.29	0.036	0.704	0.330	0.481	0.524	-0.0082 ± 0.0132 ± 0.0079	-0.0037 ± 0.0075 ± 0.0045
	0.046 – 0.067	1.64	0.056	0.568	0.350	0.402	0.699	-0.0337 ± 0.0105 ± 0.0062	-0.0230 ± 0.0076 ± 0.0041
	0.067 – 0.082	1.98	0.074	0.515	0.359	0.369	0.752	-0.0219 ± 0.0129 ± 0.0070	-0.0174 ± 0.0099 ± 0.0047
	0.082 – 0.105	2.33	0.093	0.487	0.366	0.354	0.779	-0.0092 ± 0.0115 ± 0.0081	-0.0095 ± 0.0089 ± 0.0051
	0.082 – 0.105	2.33	0.093	0.487	0.366	0.354	0.779	-0.0092 ± 0.0115 ± 0.0081	-0.0095 ± 0.0089 ± 0.0051
	0.105 – 0.134	2.86	0.118	0.468	0.369	0.348	0.797	-0.0113 ± 0.0121 ± 0.0075	-0.0131 ± 0.0095 ± 0.0038
	0.134 – 0.186	3.66	0.156	0.454	0.369	0.342	0.813	-0.0403 ± 0.0123 ± 0.0067	-0.0362 ± 0.0096 ± 0.0032
	0.186 – 0.600	5.66	0.253	0.434	0.364	0.349	0.835	-0.0797 ± 0.0149 ± 0.0152	-0.0629 ± 0.0115 ± 0.0110
z	0.200 – 0.260	2.39	0.084	0.598	0.229	0.350	0.656	-0.0182 ± 0.0084 ± 0.0000	-0.0155 ± 0.0058 ± 0.0008
	0.260 – 0.320	2.38	0.091	0.559	0.289	0.379	0.698	-0.0413 ± 0.0092 ± 0.0019	-0.0274 ± 0.0067 ± 0.0009
	0.320 – 0.380	2.36	0.094	0.536	0.348	0.403	0.721	-0.0459 ± 0.0106 ± 0.0016	-0.0296 ± 0.0079 ± 0.0015
	0.380 – 0.450	2.37	0.097	0.521	0.413	0.422	0.738	-0.0380 ± 0.0116 ± 0.0036	-0.0322 ± 0.0089 ± 0.0040
	0.450 – 0.520	2.35	0.098	0.509	0.483	0.437	0.751	-0.0267 ± 0.0138 ± 0.0092	-0.0189 ± 0.0108 ± 0.0096
	0.450 – 0.520	2.35	0.098	0.509	0.483	0.437	0.751	-0.0267 ± 0.0138 ± 0.0092	-0.0189 ± 0.0108 ± 0.0096
	0.520 – 0.600	2.31	0.098	0.498	0.558	0.449	0.764	-0.0236 ± 0.0155 ± 0.0085	-0.0237 ± 0.0125 ± 0.0108
	0.600 – 0.700	2.27	0.099	0.479	0.646	0.438	0.787	-0.0490 ± 0.0169 ± 0.0150	-0.0433 ± 0.0140 ± 0.0169
	0.700 – 0.760	2.19	0.099	0.452	0.729	0.416	0.818	-0.0061 ± 0.0258 ± 0.0085	-0.0075 ± 0.0219 ± 0.0109
	0.760 – 0.840	2.15	0.101	0.432	0.798	0.389	0.839	-0.0302 ± 0.0253 ± 0.0224	-0.0264 ± 0.0216 ± 0.0235
	0.840 – 1.200	2.08	0.104	0.399	0.906	0.338	0.868	-0.0084 ± 0.0239 ± 0.0181	-0.0080 ± 0.0207 ± 0.0186
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.48	0.107	0.462	0.337	0.110	0.811	-0.0131 ± 0.0100 ± 0.0071	-0.0137 ± 0.0083 ± 0.0077
	0.170 – 0.250	2.47	0.103	0.492	0.345	0.211	0.775	-0.0216 ± 0.0114 ± 0.0071	-0.0210 ± 0.0095 ± 0.0094
	0.250 – 0.310	2.43	0.098	0.520	0.350	0.280	0.743	-0.0304 ± 0.0134 ± 0.0117	-0.0254 ± 0.0108 ± 0.0122
	0.310 – 0.380	2.36	0.092	0.546	0.349	0.345	0.714	-0.0304 ± 0.0124 ± 0.0078	-0.0203 ± 0.0094 ± 0.0062
	0.310 – 0.380	2.36	0.092	0.546	0.349	0.345	0.714	-0.0304 ± 0.0124 ± 0.0078	-0.0203 ± 0.0094 ± 0.0062
	0.380 – 0.520	2.30	0.086	0.576	0.347	0.446	0.678	-0.0359 ± 0.0093 ± 0.0047	-0.0219 ± 0.0066 ± 0.0025
	0.520 – 0.690	2.28	0.081	0.606	0.359	0.594	0.640	-0.0530 ± 0.0114 ± 0.0033	-0.0318 ± 0.0075 ± 0.0006
	0.690 – 2.000	2.26	0.076	0.643	0.409	0.846	0.594	-0.0704 ± 0.0155 ± 0.0066	-0.0379 ± 0.0094 ± 0.0008

Table 4. One-dimensionally binned SFA and CSA amplitudes of the $\sin(\phi+\phi_S)$ modulation for π^- as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin		Average kinematics						K^+	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(\phi+\phi_S)/\epsilon \rangle_{U\perp}$	$2\langle \sin(\phi+\phi_S) \rangle_{U\perp}$
	0.023 – 0.046	1.29	0.036	0.704	0.363	0.527	0.524	0.0386 ± 0.0335 ± 0.0090	0.0183 ± 0.0190 ± 0.0041
	0.046 – 0.067	1.65	0.056	0.571	0.384	0.436	0.696	0.0231 ± 0.0254 ± 0.0152	0.0244 ± 0.0182 ± 0.0101
	0.067 – 0.082	2.01	0.074	0.524	0.392	0.398	0.743	0.0157 ± 0.0306 ± 0.0210	0.0124 ± 0.0235 ± 0.0146
x	0.082 – 0.105	2.39	0.093	0.498	0.401	0.378	0.769	0.0030 ± 0.0262 ± 0.0258	0.0027 ± 0.0207 ± 0.0171
	0.082 – 0.105	2.39	0.093	0.498	0.401	0.378	0.769	0.0030 ± 0.0262 ± 0.0258	0.0027 ± 0.0207 ± 0.0171
	0.105 – 0.134	2.93	0.118	0.479	0.404	0.366	0.788	0.0396 ± 0.0263 ± 0.0275	0.0285 ± 0.0210 ± 0.0202
	0.134 – 0.186	3.79	0.157	0.468	0.408	0.358	0.801	0.0849 ± 0.0250 ± 0.0219	0.0636 ± 0.0198 ± 0.0171
	0.186 – 0.600	5.86	0.252	0.451	0.410	0.357	0.822	0.0807 ± 0.0267 ± 0.0059	0.0693 ± 0.0209 ± 0.0058
	0.200 – 0.260	2.46	0.085	0.603	0.228	0.351	0.652	0.0262 ± 0.0238 ± 0.0081	0.0197 ± 0.0162 ± 0.0068
	0.260 – 0.320	2.49	0.092	0.569	0.287	0.378	0.688	0.0436 ± 0.0230 ± 0.0075	0.0272 ± 0.0166 ± 0.0063
	0.320 – 0.380	2.53	0.097	0.548	0.347	0.403	0.711	0.0342 ± 0.0233 ± 0.0007	0.0310 ± 0.0175 ± 0.0009
	0.380 – 0.450	2.56	0.101	0.532	0.412	0.425	0.730	0.0161 ± 0.0233 ± 0.0056	0.0195 ± 0.0182 ± 0.0047
z	0.450 – 0.520	2.55	0.102	0.522	0.482	0.458	0.739	0.0496 ± 0.0263 ± 0.0121	0.0319 ± 0.0209 ± 0.0118
	0.450 – 0.520	2.55	0.102	0.522	0.482	0.458	0.739	0.0496 ± 0.0263 ± 0.0121	0.0319 ± 0.0209 ± 0.0118
	0.520 – 0.600	2.54	0.104	0.515	0.556	0.484	0.748	0.0394 ± 0.0280 ± 0.0115	0.0386 ± 0.0225 ± 0.0128
	0.600 – 0.700	2.61	0.108	0.500	0.645	0.506	0.766	0.1263 ± 0.0294 ± 0.0085	0.0986 ± 0.0239 ± 0.0129
	0.700 – 0.760	2.63	0.112	0.474	0.727	0.506	0.797	0.0346 ± 0.0450 ± 0.0060	0.0268 ± 0.0374 ± 0.0115
	0.760 – 0.840	2.62	0.116	0.448	0.796	0.501	0.825	0.0905 ± 0.0442 ± 0.0087	0.0834 ± 0.0375 ± 0.0136
	0.840 – 1.200	2.47	0.119	0.411	0.903	0.469	0.858	0.1456 ± 0.0457 ± 0.0102	0.1374 ± 0.0393 ± 0.0018
	0.000 – 0.170	2.68	0.113	0.468	0.362	0.111	0.807	0.0181 ± 0.0220 ± 0.0383	0.0159 ± 0.0181 ± 0.0319
	0.170 – 0.250	2.66	0.109	0.495	0.372	0.211	0.775	0.0317 ± 0.0255 ± 0.0474	0.0232 ± 0.0210 ± 0.0395
	0.250 – 0.310	2.66	0.106	0.517	0.377	0.280	0.750	0.0496 ± 0.0308 ± 0.0556	0.0435 ± 0.0253 ± 0.0435
$P_{h\perp}$	0.310 – 0.380	2.56	0.099	0.540	0.381	0.345	0.723	0.0693 ± 0.0290 ± 0.0459	0.0481 ± 0.0228 ± 0.0308
	0.310 – 0.380	2.56	0.099	0.540	0.381	0.345	0.723	0.0693 ± 0.0290 ± 0.0459	0.0481 ± 0.0228 ± 0.0308
[GeV]	0.380 – 0.520	2.49	0.093	0.565	0.387	0.447	0.692	0.0569 ± 0.0218 ± 0.0393	0.0404 ± 0.0160 ± 0.0217
	0.520 – 0.690	2.41	0.087	0.593	0.402	0.597	0.658	0.0486 ± 0.0244 ± 0.0351	0.0304 ± 0.0170 ± 0.0140
	0.690 – 2.000	2.29	0.076	0.642	0.451	0.867	0.597	0.0766 ± 0.0282 ± 0.0494	0.0428 ± 0.0179 ± 0.0184

Table 5. One-dimensionally binned SFA and CSA amplitudes of the $\sin(\phi+\phi_S)$ modulation for K^+ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin		Average kinematics						K^-	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(\phi+\phi_S)/\epsilon \rangle_{U\perp}$	$2\langle \sin(\phi+\phi_S) \rangle_{U\perp}$
	0.023 – 0.046	1.30	0.036	0.711	0.338	0.503	0.513	0.0350 ± 0.0428 ± 0.0113	0.0227 ± 0.0238 ± 0.0053
	0.046 – 0.067	1.67	0.056	0.578	0.355	0.417	0.687	-0.0190 ± 0.0357 ± 0.0069	-0.0068 ± 0.0250 ± 0.0035
	0.067 – 0.082	2.04	0.074	0.533	0.361	0.381	0.734	-0.0281 ± 0.0438 ± 0.0114	-0.0196 ± 0.0330 ± 0.0076
x	0.082 – 0.105	2.44	0.093	0.510	0.367	0.367	0.758	0.0336 ± 0.0397 ± 0.0104	0.0144 ± 0.0303 ± 0.0077
	0.082 – 0.105	2.44	0.093	0.510	0.367	0.367	0.758	0.0336 ± 0.0397 ± 0.0104	0.0144 ± 0.0303 ± 0.0077
	0.105 – 0.134	3.01	0.118	0.493	0.366	0.362	0.775	0.0036 ± 0.0431 ± 0.0093	0.0048 ± 0.0332 ± 0.0055
	0.134 – 0.186	3.89	0.157	0.480	0.365	0.356	0.790	0.0383 ± 0.0426 ± 0.0106	0.0321 ± 0.0327 ± 0.0068
	0.186 – 0.600	5.82	0.251	0.451	0.363	0.364	0.821	0.0100 ± 0.0513 ± 0.0432	0.0057 ± 0.0394 ± 0.0327
	0.200 – 0.260	2.41	0.082	0.616	0.227	0.362	0.636	-0.0026 ± 0.0312 ± 0.0069	-0.0012 ± 0.0204 ± 0.0053
	0.260 – 0.320	2.41	0.087	0.582	0.287	0.389	0.673	-0.0502 ± 0.0321 ± 0.0050	-0.0349 ± 0.0225 ± 0.0041
	0.320 – 0.380	2.40	0.091	0.557	0.347	0.419	0.701	0.0338 ± 0.0350 ± 0.0014	0.0302 ± 0.0255 ± 0.0001
	0.380 – 0.450	2.37	0.092	0.542	0.411	0.440	0.718	0.0103 ± 0.0381 ± 0.0126	0.0208 ± 0.0292 ± 0.0101
z	0.450 – 0.520	2.29	0.091	0.534	0.482	0.460	0.726	0.0219 ± 0.0440 ± 0.0316	0.0150 ± 0.0344 ± 0.0258
	0.450 – 0.520	2.29	0.091	0.534	0.482	0.460	0.726	0.0219 ± 0.0440 ± 0.0316	0.0150 ± 0.0344 ± 0.0258
	0.520 – 0.600	2.34	0.093	0.531	0.556	0.465	0.729	-0.0221 ± 0.0524 ± 0.0459	-0.0289 ± 0.0410 ± 0.0408
	0.600 – 0.700	2.33	0.094	0.520	0.642	0.493	0.744	0.1069 ± 0.0654 ± 0.0582	0.0919 ± 0.0528 ± 0.0537
	0.700 – 0.760	2.28	0.093	0.506	0.726	0.500	0.766	-0.0925 ± 0.1144 ± 0.0497	-0.1114 ± 0.0920 ± 0.0479
	0.760 – 0.840	2.30	0.096	0.482	0.793	0.464	0.795	-0.0136 ± 0.1591 ± 0.0372	-0.0294 ± 0.1350 ± 0.0371
	0.000 – 0.170	2.47	0.103	0.477	0.337	0.111	0.797	0.0067 ± 0.0357 ± 0.0105	0.0023 ± 0.0293 ± 0.0059
	0.170 – 0.250	2.48	0.100	0.513	0.346	0.210	0.756	-0.1044 ± 0.0412 ± 0.0066	-0.0823 ± 0.0339 ± 0.0004
	0.250 – 0.310	2.48	0.096	0.540	0.346	0.280	0.724	0.0132 ± 0.0500 ± 0.0088	0.0104 ± 0.0405 ± 0.0025
$P_{h\perp}$	0.310 – 0.380	2.39	0.089	0.566	0.351	0.345	0.692	0.0635 ± 0.0461 ± 0.0092	0.0247 ± 0.0346 ± 0.0024
	0.310 – 0.380	2.39	0.089	0.566	0.351	0.345	0.692	0.0635 ± 0.0461 ± 0.0092	0.0247 ± 0.0346 ± 0.0024
[GeV]	0.380 – 0.520	2.32	0.084	0.592	0.348	0.447	0.661	0.0235 ± 0.0333 ± 0.0071	0.0159 ± 0.0232 ± 0.0008
	0.520 – 0.690	2.31	0.080	0.620	0.358	0.597	0.625	0.0200 ± 0.0375 ± 0.0174	0.0136 ± 0.0243 ± 0.0078
	0.690 – 2.000	2.26	0.073	0.661	0.409	0.856	0.572	-0.0060 ± 0.0460 ± 0.0149	0.0080 ± 0.0271 ± 0.0080

Table 6. One-dimensionally binned SFA and CSA amplitudes of the $\sin(\phi+\phi_S)$ modulation for K^- as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin		Average kinematics						p	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(\phi+\phi_S)/\epsilon \rangle_{U\perp}$	$2\langle \sin(\phi+\phi_S) \rangle_{U\perp}$
x	0.023 – 0.040	1.24	0.033	0.738	0.354	0.550	0.475	0.0246 ± 0.0462 ± 0.0236	0.0373 ± 0.0251 ± 0.0100
	0.040 – 0.057	1.54	0.048	0.619	0.395	0.490	0.640	-0.0151 ± 0.0337 ± 0.0146	-0.0151 ± 0.0225 ± 0.0085
	0.057 – 0.075	1.90	0.066	0.561	0.424	0.447	0.706	-0.0377 ± 0.0330 ± 0.0215	-0.0289 ± 0.0241 ± 0.0118
	0.075 – 0.098	2.36	0.086	0.533	0.439	0.430	0.735	-0.0007 ± 0.0316 ± 0.0211	-0.0003 ± 0.0241 ± 0.0146
	0.075 – 0.098	2.36	0.086	0.533	0.439	0.430	0.735	-0.0007 ± 0.0316 ± 0.0211	-0.0003 ± 0.0241 ± 0.0146
	0.098 – 0.136	3.06	0.115	0.514	0.449	0.406	0.757	-0.0331 ± 0.0278 ± 0.0201	-0.0235 ± 0.0216 ± 0.0154
	0.136 – 0.185	4.04	0.158	0.496	0.457	0.390	0.777	-0.0264 ± 0.0312 ± 0.0171	-0.0212 ± 0.0244 ± 0.0132
	0.185 – 0.600	6.13	0.257	0.464	0.471	0.383	0.811	-0.0380 ± 0.0300 ± 0.0211	-0.0368 ± 0.0237 ± 0.0183
z	0.200 – 0.270	2.30	0.062	0.739	0.239	0.477	0.477	-0.0471 ± 0.0445 ± 0.0250	-0.0202 ± 0.0235 ± 0.0129
	0.270 – 0.340	2.57	0.081	0.643	0.306	0.456	0.613	-0.0021 ± 0.0296 ± 0.0415	0.0131 ± 0.0195 ± 0.0236
	0.340 – 0.410	2.64	0.093	0.583	0.375	0.443	0.683	-0.0300 ± 0.0255 ± 0.0479	-0.0214 ± 0.0191 ± 0.0343
	0.410 – 0.470	2.66	0.102	0.544	0.439	0.446	0.723	-0.0312 ± 0.0273 ± 0.0378	-0.0209 ± 0.0214 ± 0.0297
	0.470 – 0.530	2.68	0.109	0.512	0.499	0.435	0.757	-0.0149 ± 0.0289 ± 0.0123	-0.0067 ± 0.0232 ± 0.0108
	0.470 – 0.530	2.68	0.109	0.512	0.499	0.435	0.757	-0.0149 ± 0.0289 ± 0.0123	-0.0067 ± 0.0232 ± 0.0108
	0.530 – 0.610	2.64	0.113	0.485	0.567	0.452	0.781	-0.0058 ± 0.0287 ± 0.0064	-0.0013 ± 0.0232 ± 0.0041
	0.610 – 0.700	2.63	0.119	0.455	0.650	0.463	0.810	-0.0631 ± 0.0351 ± 0.0069	-0.0507 ± 0.0287 ± 0.0042
	0.700 – 0.780	2.57	0.123	0.423	0.735	0.477	0.841	0.0191 ± 0.0515 ± 0.0003	0.0149 ± 0.0432 ± 0.0013
	0.780 – 0.880	2.54	0.130	0.389	0.821	0.490	0.872	-0.0406 ± 0.0733 ± 0.0022	-0.0327 ± 0.0625 ± 0.0016
	0.880 – 1.200	2.45	0.136	0.353	0.938	0.505	0.900	-0.0115 ± 0.1191 ± 0.0314	-0.0093 ± 0.1042 ± 0.0312
$P_{h\perp}$ [GeV]	0.000 – 0.230	2.88	0.113	0.510	0.435	0.150	0.765	-0.0625 ± 0.0231 ± 0.0135	-0.0495 ± 0.0187 ± 0.0117
	0.230 – 0.340	2.76	0.106	0.543	0.427	0.286	0.723	-0.0441 ± 0.0265 ± 0.0262	-0.0376 ± 0.0216 ± 0.0214
	0.340 – 0.430	2.62	0.097	0.569	0.416	0.385	0.691	-0.0185 ± 0.0318 ± 0.0199	-0.0060 ± 0.0245 ± 0.0139
	0.430 – 0.520	2.54	0.091	0.590	0.413	0.474	0.666	-0.0006 ± 0.0338 ± 0.0247	0.0076 ± 0.0246 ± 0.0147
	0.430 – 0.520	2.54	0.091	0.590	0.413	0.474	0.666	-0.0006 ± 0.0338 ± 0.0247	0.0076 ± 0.0246 ± 0.0147
	0.520 – 0.620	2.44	0.085	0.608	0.406	0.568	0.644	0.0359 ± 0.0345 ± 0.0196	0.0232 ± 0.0237 ± 0.0123
	0.620 – 0.740	2.35	0.080	0.620	0.405	0.676	0.628	-0.0557 ± 0.0377 ± 0.0257	-0.0294 ± 0.0253 ± 0.0171
	0.740 – 2.000	2.31	0.078	0.633	0.432	0.904	0.609	-0.0237 ± 0.0368 ± 0.0147	-0.0054 ± 0.0227 ± 0.0073

Table 7. One-dimensionally binned SFA and CSA amplitudes of the $\sin(\phi+\phi_S)$ modulation for p as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin		Average kinematics						$\bar{p}$	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(\phi+\phi_S)/\epsilon \rangle_{U\perp}$	$2\langle \sin(\phi+\phi_S) \rangle_{U\perp}$
x	0.023 – 0.040	1.26	0.032	0.759	0.335	0.539	0.442	-0.0956 ± 0.0965 ± 0.0057	-0.0325 ± 0.0461 ± 0.0026
	0.040 – 0.057	1.65	0.048	0.666	0.360	0.492	0.579	-0.0236 ± 0.0880 ± 0.0325	-0.0466 ± 0.0521 ± 0.0176
	0.057 – 0.075	2.12	0.065	0.628	0.372	0.472	0.626	-0.0645 ± 0.0891 ± 0.0262	-0.0865 ± 0.0545 ± 0.0096
	0.075 – 0.098	2.69	0.085	0.608	0.377	0.450	0.655	-0.0944 ± 0.0993 ± 0.0440	-0.0636 ± 0.0653 ± 0.0193
	0.075 – 0.098	2.69	0.085	0.608	0.377	0.450	0.655	-0.0944 ± 0.0993 ± 0.0440	-0.0636 ± 0.0653 ± 0.0193
	0.098 – 0.136	3.48	0.115	0.588	0.385	0.429	0.678	0.0345 ± 0.0979 ± 0.0417	0.0379 ± 0.0671 ± 0.0217
	0.136 – 0.185	4.58	0.158	0.562	0.385	0.399	0.712	-0.0802 ± 0.1177 ± 0.0352	-0.0676 ± 0.0856 ± 0.0175
	0.185 – 0.600	6.60	0.243	0.531	0.406	0.383	0.748	0.1026 ± 0.1166 ± 0.0301	0.0796 ± 0.0864 ± 0.0217
z	0.200 – 0.270	2.25	0.060	0.750	0.238	0.471	0.459	-0.1195 ± 0.0910 ± 0.0100	-0.0538 ± 0.0442 ± 0.0010
	0.270 – 0.340	2.48	0.074	0.679	0.304	0.476	0.562	0.0490 ± 0.0711 ± 0.0466	0.0192 ± 0.0415 ± 0.0212
	0.340 – 0.410	2.43	0.079	0.634	0.373	0.482	0.618	-0.1175 ± 0.0761 ± 0.0607	-0.0920 ± 0.0496 ± 0.0256
	0.410 – 0.470	2.43	0.085	0.595	0.437	0.470	0.665	0.1077 ± 0.1022 ± 0.0534	0.0215 ± 0.0740 ± 0.0265
	0.470 – 0.530	2.41	0.085	0.583	0.498	0.478	0.678	0.0378 ± 0.1136 ± 0.0723	-0.0036 ± 0.0832 ± 0.0411
	0.470 – 0.530	2.41	0.085	0.583	0.498	0.478	0.678	0.0378 ± 0.1136 ± 0.0723	-0.0036 ± 0.0832 ± 0.0411
	0.530 – 0.610	2.26	0.083	0.567	0.563	0.492	0.698	0.0255 ± 0.1438 ± 0.0502	0.0202 ± 0.1107 ± 0.0262
	0.610 – 0.700	2.40	0.095	0.527	0.645	0.502	0.745	-0.3025 ± 0.1757 ± 0.0490	-0.2074 ± 0.1388 ± 0.0289
$P_{h\perp}$ [GeV]	0.000 – 0.230	2.79	0.097	0.586	0.378	0.151	0.683	-0.0373 ± 0.0849 ± 0.0554	-0.0353 ± 0.0644 ± 0.0295
	0.230 – 0.340	2.53	0.083	0.630	0.364	0.288	0.622	-0.1103 ± 0.1045 ± 0.0562	-0.0745 ± 0.0809 ± 0.0230
	0.340 – 0.430	2.37	0.075	0.652	0.358	0.385	0.592	0.0754 ± 0.1128 ± 0.0426	0.0095 ± 0.0703 ± 0.0090
	0.430 – 0.520	2.35	0.073	0.667	0.351	0.475	0.572	-0.2005 ± 0.1013 ± 0.0523	-0.1274 ± 0.0609 ± 0.0172
	0.430 – 0.520	2.35	0.073	0.667	0.351	0.475	0.572	-0.2005 ± 0.1013 ± 0.0523	-0.1274 ± 0.0609 ± 0.0172
	0.520 – 0.620	2.30	0.070	0.678	0.355	0.569	0.557	-0.1252 ± 0.0995 ± 0.0339	-0.0869 ± 0.0591 ± 0.0088
	0.620 – 0.740	2.21	0.066	0.687	0.355	0.675	0.544	-0.0522 ± 0.1005 ± 0.0408	-0.0498 ± 0.0564 ± 0.0143
	0.740 – 2.000	2.12	0.062	0.698	0.386	0.886	0.527	0.2410 ± 0.1100 ± 0.0249	0.1129 ± 0.0575 ± 0.0097

Table 8. One-dimensionally binned SFA and CSA amplitudes of the $\sin(\phi+\phi_S)$ modulation for $\bar{p}$ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin			Average kinematics						π^+	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(\phi+\phi_S)/\epsilon \rangle_{U\perp}$	$2\langle \sin(\phi+\phi_S) \rangle_{U\perp}$
0.023 – 0.072	0.20 – 0.28	0.00 – 0.23	1.46	0.052	0.561	0.236	0.151	0.708	-0.0237 ± 0.0375 ± 0.0158	-0.0237 ± 0.0375 ± 0.0158
		0.23 – 0.36	1.51	0.048	0.632	0.235	0.298	0.619	-0.0021 ± 0.0237 ± 0.0067	-0.0021 ± 0.0237 ± 0.0067
		0.36 – 0.54	1.54	0.046	0.673	0.237	0.443	0.564	0.0235 ± 0.0175 ± 0.0057	0.0235 ± 0.0175 ± 0.0057
		0.54 – 2.00	1.59	0.043	0.730	0.242	0.655	0.483	0.0197 ± 0.0297 ± 0.0020	0.0197 ± 0.0297 ± 0.0020
	0.28 – 0.37	0.00 – 0.23	1.43	0.054	0.525	0.320	0.150	0.750	-0.0425 ± 0.0404 ± 0.0030	-0.0425 ± 0.0404 ± 0.0030
		0.23 – 0.36	1.48	0.050	0.595	0.320	0.297	0.665	0.0325 ± 0.0609 ± 0.0182	0.0325 ± 0.0609 ± 0.0182
		0.36 – 0.54	1.52	0.047	0.640	0.320	0.449	0.607	0.0273 ± 0.0239 ± 0.0024	0.0273 ± 0.0239 ± 0.0024
		0.54 – 2.00	1.56	0.045	0.692	0.323	0.699	0.536	0.0469 ± 0.0233 ± 0.0031	0.0469 ± 0.0233 ± 0.0031
	0.37 – 0.49	0.00 – 0.23	1.40	0.055	0.504	0.422	0.151	0.775	-0.0010 ± 0.0440 ± 0.0051	-0.0010 ± 0.0440 ± 0.0051
		0.23 – 0.36	1.45	0.051	0.563	0.422	0.298	0.705	-0.0589 ± 0.0764 ± 0.0082	-0.0589 ± 0.0764 ± 0.0082
		0.36 – 0.54	1.49	0.049	0.609	0.423	0.447	0.648	0.0444 ± 0.0510 ± 0.0051	0.0444 ± 0.0510 ± 0.0051
		0.54 – 2.00	1.54	0.046	0.668	0.425	0.747	0.569	0.0513 ± 0.0235 ± 0.0065	0.0513 ± 0.0235 ± 0.0065
	0.49 – 0.70	0.00 – 0.23	1.38	0.056	0.488	0.579	0.151	0.793	-0.0135 ± 0.0469 ± 0.0086	-0.0135 ± 0.0469 ± 0.0086
		0.23 – 0.36	1.41	0.053	0.529	0.578	0.298	0.745	0.0708 ± 0.0723 ± 0.0242	0.0708 ± 0.0723 ± 0.0242
		0.36 – 0.54	1.45	0.051	0.571	0.577	0.448	0.695	0.0222 ± 0.0766 ± 0.0112	0.0222 ± 0.0766 ± 0.0112
		0.54 – 2.00	1.51	0.048	0.633	0.577	0.786	0.618	-0.0191 ± 0.0306 ± 0.0102	-0.0191 ± 0.0306 ± 0.0102
0.072 – 0.098	0.20 – 0.28	0.00 – 0.23	2.10	0.084	0.484	0.239	0.140	0.792	0.0323 ± 0.0318 ± 0.0032	0.0323 ± 0.0318 ± 0.0032
		0.23 – 0.36	2.39	0.084	0.550	0.238	0.295	0.721	0.0176 ± 0.0357 ± 0.0011	0.0176 ± 0.0357 ± 0.0011
		0.36 – 0.54	2.47	0.084	0.572	0.239	0.441	0.692	-0.0143 ± 0.0310 ± 0.0046	-0.0143 ± 0.0310 ± 0.0046
		0.54 – 2.00	2.73	0.084	0.633	0.244	0.643	0.620	0.0526 ± 0.0638 ± 0.0061	0.0526 ± 0.0638 ± 0.0061
	0.28 – 0.37	0.00 – 0.23	1.89	0.084	0.434	0.321	0.142	0.834	0.0861 ± 0.0311 ± 0.0047	0.0861 ± 0.0311 ± 0.0047
		0.23 – 0.36	2.14	0.084	0.492	0.322	0.293	0.778	-0.0282 ± 0.0535 ± 0.0070	-0.0282 ± 0.0535 ± 0.0070
		0.36 – 0.54	2.30	0.084	0.530	0.321	0.444	0.736	-0.0121 ± 0.0339 ± 0.0017	-0.0121 ± 0.0339 ± 0.0017
		0.54 – 2.00	2.51	0.084	0.581	0.325	0.676	0.678	-0.0900 ± 0.0431 ± 0.0055	-0.0900 ± 0.0431 ± 0.0055
	0.37 – 0.49	0.00 – 0.23	1.83	0.085	0.420	0.423	0.146	0.846	-0.1046 ± 0.0338 ± 0.0015	-0.1046 ± 0.0338 ± 0.0015
		0.23 – 0.36	1.99	0.085	0.455	0.424	0.293	0.812	-0.0410 ± 0.0501 ± 0.0022	-0.0410 ± 0.0501 ± 0.0022
		0.36 – 0.54	2.18	0.084	0.502	0.425	0.443	0.766	0.0063 ± 0.0545 ± 0.0060	0.0063 ± 0.0545 ± 0.0060
		0.54 – 2.00	2.38	0.084	0.551	0.427	0.719	0.711	0.0202 ± 0.0377 ± 0.0019	0.0202 ± 0.0377 ± 0.0019
	0.49 – 0.70	0.00 – 0.23	1.78	0.085	0.407	0.578	0.148	0.857	-0.0176 ± 0.0388 ± 0.0075	-0.0176 ± 0.0388 ± 0.0075
		0.23 – 0.36	1.87	0.085	0.427	0.580	0.295	0.838	-0.0446 ± 0.0446 ± 0.0136	-0.0446 ± 0.0446 ± 0.0136
		0.36 – 0.54	2.02	0.084	0.463	0.583	0.443	0.806	0.0567 ± 0.0583 ± 0.0098	0.0567 ± 0.0583 ± 0.0098
		0.54 – 2.00	2.29	0.084	0.530	0.583	0.754	0.736	0.0631 ± 0.0422 ± 0.0188	0.0631 ± 0.0422 ± 0.0188
0.098 – 0.138	0.20 – 0.28	0.00 – 0.23	2.86	0.116	0.477	0.239	0.139	0.799	0.0550 ± 0.0269 ± 0.0043	0.0550 ± 0.0269 ± 0.0043
		0.23 – 0.36	3.18	0.116	0.532	0.239	0.292	0.742	0.0619 ± 0.0364 ± 0.0013	0.0619 ± 0.0364 ± 0.0013
		0.36 – 0.54	3.26	0.115	0.547	0.239	0.441	0.721	0.0325 ± 0.0351 ± 0.0041	0.0325 ± 0.0351 ± 0.0041
		0.54 – 2.00	3.53	0.115	0.593	0.244	0.638	0.670	0.0900 ± 0.0759 ± 0.0080	0.0900 ± 0.0759 ± 0.0080
	0.28 – 0.37	0.00 – 0.23	2.53	0.116	0.422	0.322	0.143	0.843	-0.0245 ± 0.0265 ± 0.0068	-0.0245 ± 0.0265 ± 0.0068
		0.23 – 0.36	2.81	0.116	0.469	0.323	0.291	0.799	0.0070 ± 0.0411 ± 0.0062	0.0070 ± 0.0411 ± 0.0062
		0.36 – 0.54	3.03	0.116	0.508	0.322	0.442	0.759	-0.0010 ± 0.0360 ± 0.0090	-0.0010 ± 0.0360 ± 0.0090
		0.54 – 2.00	3.21	0.115	0.539	0.325	0.672	0.725	0.1110 ± 0.0498 ± 0.0013	0.1110 ± 0.0498 ± 0.0013
	0.37 – 0.49	0.00 – 0.23	2.41	0.116	0.402	0.423	0.148	0.857	0.0500 ± 0.0300 ± 0.0028	0.0500 ± 0.0300 ± 0.0028
		0.23 – 0.36	2.51	0.116	0.418	0.426	0.293	0.841	0.0936 ± 0.0364 ± 0.0114	0.0936 ± 0.0364 ± 0.0114
		0.36 – 0.54	2.84	0.116	0.475	0.427	0.441	0.791	0.0976 ± 0.0452 ± 0.0120	0.0976 ± 0.0452 ± 0.0120
		0.54 – 2.00	3.11	0.116	0.521	0.427	0.716	0.741	0.0855 ± 0.0404 ± 0.0089	0.0855 ± 0.0404 ± 0.0089
	0.49 – 0.70	0.00 – 0.23	2.38	0.116	0.398	0.577	0.151	0.862	0.0356 ± 0.0350 ± 0.0042	0.0356 ± 0.0350 ± 0.0042
		0.23 – 0.36	2.40	0.116	0.400	0.579	0.296	0.858	0.0555 ± 0.0358 ± 0.0094	0.0555 ± 0.0358 ± 0.0094
		0.36 – 0.54	2.55	0.116	0.426	0.582	0.441	0.835	-0.0209 ± 0.0396 ± 0.0119	-0.0209 ± 0.0396 ± 0.0119
		0.54 – 2.00	2.98	0.115	0.500	0.584	0.742	0.765	0.0197 ± 0.0404 ± 0.0102	0.0197 ± 0.0404 ± 0.0102
0.138 – 0.600	0.20 – 0.28	0.00 – 0.23	4.95	0.205	0.467	0.239	0.141	0.811	0.0272 ± 0.0210 ± 0.0052	0.0272 ± 0.0210 ± 0.0052
		0.23 – 0.36	5.26	0.214	0.486	0.241	0.290	0.790	0.0167 ± 0.0307 ± 0.0061	0.0167 ± 0.0307 ± 0.0061
		0.36 – 0.54	5.21	0.207	0.497	0.240	0.440	0.776	0.0240 ± 0.0417 ± 0.0044	0.0240 ± 0.0417 ± 0.0044
		0.54 – 2.00	5.42	0.209	0.515	0.244	0.637	0.759	0.1536 ± 0.1291 ± 0.0010	0.1536 ± 0.1291 ± 0.0010
	0.28 – 0.37	0.00 – 0.23	4.48	0.201	0.428	0.321	0.147	0.841	0.0237 ± 0.0224 ± 0.0057	0.0237 ± 0.0224 ± 0.0057
		0.23 – 0.36	4.64	0.210	0.430	0.323	0.292	0.835	-0.0180 ± 0.0289 ± 0.0078	-0.0180 ± 0.0289 ± 0.0078
		0.36 – 0.54	4.89	0.211	0.457	0.324	0.439	0.810	0.0137 ± 0.0342 ± 0.0067	0.0137 ± 0.0342 ± 0.0067
		0.54 – 2.00	4.93	0.205	0.474	0.325	0.671	0.793	0.0705 ± 0.0615 ± 0.0055	0.0705 ± 0.0615 ± 0.0055
	0.37 – 0.49	0.00 – 0.23	4.38	0.201	0.419	0.422	0.150	0.847	0.0603 ± 0.0258 ± 0.0072	0.0603 ± 0.0258 ± 0.0072
		0.23 – 0.36	4.38	0.205	0.413	0.424	0.294	0.850	0.0773 ± 0.0291 ± 0.0001	0.0773 ± 0.0291 ± 0.0001
		0.36 – 0.54	4.65	0.210	0.432	0.427	0.438	0.832	0.0153 ± 0.0323 ± 0.0039	0.0153 ± 0.0323 ± 0.0039
		0.54 – 2.00	4.84	0.205	0.466	0.427	0.704	0.799	-0.0575 ± 0.0431 ± 0.0100	-0.0575 ± 0.0431 ± 0.0100
	0.49 – 0.70	0.00 – 0.23	4.33	0.200	0.414	0.575	0.153	0.852	0.0451 ± 0.0305 ± 0.0115	0.0451 ± 0.0305 ± 0.0115
		0.23 – 0.36	4.28	0.200	0.410	0.577	0.296	0.852	0.0552 ± 0.0315 ± 0.0067	0.0552 ± 0.0315 ± 0.0067
		0.36 – 0.54	4.41	0.206	0.413	0.580	0.444	0.848	0.0641 ± 0.0306 ± 0.0014	0.0641 ± 0.0306 ± 0.0014
		0.54 – 2.00	4.82	0.209	0.454	0.587	0.723	0.811	0.0484 ± 0.0346 ± 0.0031	0.0484 ± 0.0346 ± 0.0031

Table 9. Three-dimensionally binned SFA and CSA amplitudes of the $\sin(\phi+\phi_S)$ modulation for π^+ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin			Average kinematics						π^-	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(\phi+\phi_S)/\epsilon \rangle_{U\perp}$	$2\langle \sin(\phi+\phi_S) \rangle_{U\perp}$
0.023 – 0.072	0.20 – 0.28	0.00 – 0.23	1.46	0.052	0.561	0.236	0.152	0.709	-0.0106 ± 0.0432 ± 0.0005	-0.0106 ± 0.0432 ± 0.0005
		0.23 – 0.36	1.51	0.047	0.636	0.234	0.298	0.613	-0.0066 ± 0.0260 ± 0.0007	-0.0066 ± 0.0260 ± 0.0007
		0.36 – 0.54	1.53	0.045	0.674	0.236	0.443	0.561	-0.0340 ± 0.0197 ± 0.0036	-0.0340 ± 0.0197 ± 0.0036
		0.54 – 2.00	1.58	0.043	0.729	0.241	0.658	0.483	-0.0436 ± 0.0329 ± 0.0037	-0.0436 ± 0.0329 ± 0.0037
	0.28 – 0.37	0.00 – 0.23	1.43	0.054	0.527	0.320	0.150	0.748	-0.0418 ± 0.0469 ± 0.0024	-0.0418 ± 0.0469 ± 0.0024
		0.23 – 0.36	1.48	0.049	0.597	0.320	0.296	0.662	-0.1150 ± 0.0710 ± 0.0049	-0.1150 ± 0.0710 ± 0.0049
		0.36 – 0.54	1.50	0.047	0.643	0.319	0.449	0.603	-0.0468 ± 0.0265 ± 0.0038	-0.0468 ± 0.0265 ± 0.0038
		0.54 – 2.00	1.55	0.045	0.692	0.323	0.703	0.536	-0.0171 ± 0.0260 ± 0.0060	-0.0171 ± 0.0260 ± 0.0060
	0.37 – 0.49	0.00 – 0.23	1.40	0.055	0.505	0.422	0.152	0.774	-0.0585 ± 0.0514 ± 0.0091	-0.0585 ± 0.0514 ± 0.0091
		0.23 – 0.36	1.45	0.051	0.566	0.423	0.298	0.701	0.0926 ± 0.0886 ± 0.0014	0.0926 ± 0.0886 ± 0.0014
		0.36 – 0.54	1.49	0.048	0.615	0.423	0.448	0.640	-0.0209 ± 0.0547 ± 0.0027	-0.0209 ± 0.0547 ± 0.0027
		0.54 – 2.00	1.53	0.046	0.669	0.424	0.749	0.568	-0.0251 ± 0.0271 ± 0.0010	-0.0251 ± 0.0271 ± 0.0010
	0.49 – 0.70	0.00 – 0.23	1.37	0.056	0.487	0.579	0.151	0.794	0.0376 ± 0.0520 ± 0.0056	0.0376 ± 0.0520 ± 0.0056
		0.23 – 0.36	1.41	0.053	0.532	0.580	0.298	0.743	0.0175 ± 0.0844 ± 0.0006	0.0175 ± 0.0844 ± 0.0006
		0.36 – 0.54	1.44	0.050	0.575	0.578	0.446	0.691	-0.0540 ± 0.0959 ± 0.0055	-0.0540 ± 0.0959 ± 0.0055
		0.54 – 2.00	1.51	0.047	0.638	0.573	0.785	0.611	-0.0541 ± 0.0363 ± 0.0063	-0.0541 ± 0.0363 ± 0.0063
0.072 – 0.098	0.20 – 0.28	0.00 – 0.23	2.10	0.084	0.484	0.239	0.140	0.791	0.0421 ± 0.0360 ± 0.0073	0.0421 ± 0.0360 ± 0.0073
		0.23 – 0.36	2.37	0.084	0.547	0.237	0.294	0.724	0.0059 ± 0.0397 ± 0.0025	0.0059 ± 0.0397 ± 0.0025
		0.36 – 0.54	2.46	0.084	0.569	0.238	0.440	0.695	-0.0107 ± 0.0354 ± 0.0075	-0.0107 ± 0.0354 ± 0.0075
		0.54 – 2.00	2.72	0.083	0.632	0.244	0.644	0.622	-0.0376 ± 0.0718 ± 0.0156	-0.0376 ± 0.0718 ± 0.0156
	0.28 – 0.37	0.00 – 0.23	1.88	0.084	0.432	0.321	0.142	0.836	0.0061 ± 0.0362 ± 0.0018	0.0061 ± 0.0362 ± 0.0018
		0.23 – 0.36	2.13	0.084	0.490	0.322	0.292	0.779	-0.0039 ± 0.0642 ± 0.0002	-0.0039 ± 0.0642 ± 0.0002
		0.36 – 0.54	2.26	0.084	0.523	0.320	0.445	0.742	-0.0212 ± 0.0402 ± 0.0010	-0.0212 ± 0.0402 ± 0.0010
		0.54 – 2.00	2.48	0.084	0.575	0.324	0.678	0.685	-0.0163 ± 0.0505 ± 0.0036	-0.0163 ± 0.0505 ± 0.0036
	0.37 – 0.49	0.00 – 0.23	1.82	0.084	0.418	0.423	0.146	0.847	-0.0059 ± 0.0404 ± 0.0052	-0.0059 ± 0.0404 ± 0.0052
		0.23 – 0.36	1.95	0.084	0.448	0.424	0.292	0.819	0.0956 ± 0.0602 ± 0.0063	0.0956 ± 0.0602 ± 0.0063
		0.36 – 0.54	2.17	0.084	0.502	0.424	0.442	0.767	-0.0727 ± 0.0642 ± 0.0038	-0.0727 ± 0.0642 ± 0.0038
		0.54 – 2.00	2.37	0.084	0.546	0.425	0.724	0.715	-0.0324 ± 0.0451 ± 0.0078	-0.0324 ± 0.0451 ± 0.0078
	0.49 – 0.70	0.00 – 0.23	1.78	0.084	0.407	0.579	0.148	0.856	-0.0722 ± 0.0464 ± 0.0003	-0.0722 ± 0.0464 ± 0.0003
		0.23 – 0.36	1.85	0.084	0.425	0.581	0.295	0.840	-0.0348 ± 0.0514 ± 0.0112	-0.0348 ± 0.0514 ± 0.0112
		0.36 – 0.54	2.00	0.084	0.461	0.582	0.442	0.808	0.0207 ± 0.0690 ± 0.0003	0.0207 ± 0.0690 ± 0.0003
		0.54 – 2.00	2.26	0.084	0.524	0.580	0.751	0.743	-0.0746 ± 0.0520 ± 0.0104	-0.0746 ± 0.0520 ± 0.0104
0.098 – 0.138	0.20 – 0.28	0.00 – 0.23	2.86	0.116	0.477	0.239	0.138	0.799	-0.0032 ± 0.0310 ± 0.0001	-0.0032 ± 0.0310 ± 0.0001
		0.23 – 0.36	3.17	0.116	0.531	0.238	0.292	0.743	0.0031 ± 0.0427 ± 0.0022	0.0031 ± 0.0427 ± 0.0022
		0.36 – 0.54	3.25	0.115	0.545	0.239	0.442	0.724	-0.0203 ± 0.0419 ± 0.0022	-0.0203 ± 0.0419 ± 0.0022
		0.54 – 2.00	3.54	0.116	0.593	0.244	0.645	0.671	-0.0619 ± 0.0972 ± 0.0237	-0.0619 ± 0.0972 ± 0.0237
	0.28 – 0.37	0.00 – 0.23	2.52	0.116	0.420	0.321	0.144	0.844	-0.0036 ± 0.0315 ± 0.0027	-0.0036 ± 0.0315 ± 0.0027
		0.23 – 0.36	2.77	0.116	0.462	0.323	0.291	0.806	0.0377 ± 0.0490 ± 0.0005	0.0377 ± 0.0490 ± 0.0005
		0.36 – 0.54	2.98	0.116	0.500	0.322	0.444	0.766	-0.0400 ± 0.0418 ± 0.0011	-0.0400 ± 0.0418 ± 0.0011
		0.54 – 2.00	3.17	0.116	0.532	0.324	0.675	0.732	-0.0744 ± 0.0579 ± 0.0052	-0.0744 ± 0.0579 ± 0.0052
	0.37 – 0.49	0.00 – 0.23	2.39	0.116	0.399	0.422	0.148	0.860	0.0277 ± 0.0366 ± 0.0011	0.0277 ± 0.0366 ± 0.0011
		0.23 – 0.36	2.48	0.116	0.413	0.425	0.293	0.845	0.0114 ± 0.0436 ± 0.0039	0.0114 ± 0.0436 ± 0.0039
		0.36 – 0.54	2.80	0.116	0.467	0.426	0.441	0.797	-0.0401 ± 0.0552 ± 0.0022	-0.0401 ± 0.0552 ± 0.0022
		0.54 – 2.00	3.00	0.115	0.504	0.424	0.716	0.756	-0.0770 ± 0.0484 ± 0.0007	-0.0770 ± 0.0484 ± 0.0007
	0.49 – 0.70	0.00 – 0.23	2.37	0.116	0.396	0.579	0.150	0.863	0.0057 ± 0.0422 ± 0.0071	0.0057 ± 0.0422 ± 0.0071
		0.23 – 0.36	2.39	0.116	0.399	0.577	0.295	0.859	0.0070 ± 0.0440 ± 0.0022	0.0070 ± 0.0440 ± 0.0022
		0.36 – 0.54	2.55	0.116	0.426	0.583	0.441	0.834	0.0186 ± 0.0508 ± 0.0055	0.0186 ± 0.0508 ± 0.0055
		0.54 – 2.00	2.92	0.115	0.490	0.581	0.747	0.774	-0.1166 ± 0.0512 ± 0.0114	-0.1166 ± 0.0512 ± 0.0114
0.138 – 0.600	0.20 – 0.28	0.00 – 0.23	4.91	0.204	0.467	0.239	0.141	0.811	-0.0322 ± 0.0252 ± 0.0018	-0.0322 ± 0.0252 ± 0.0018
		0.23 – 0.36	5.22	0.212	0.486	0.240	0.290	0.790	-0.0645 ± 0.0368 ± 0.0006	-0.0645 ± 0.0368 ± 0.0006
		0.36 – 0.54	5.18	0.205	0.499	0.239	0.443	0.775	-0.0179 ± 0.0512 ± 0.0053	-0.0179 ± 0.0512 ± 0.0053
		0.54 – 2.00	5.40	0.211	0.509	0.243	0.645	0.767	-0.1699 ± 0.1450 ± 0.0027	-0.1699 ± 0.1450 ± 0.0027
	0.28 – 0.37	0.00 – 0.23	4.41	0.199	0.426	0.321	0.148	0.842	-0.0215 ± 0.0281 ± 0.0016	-0.0215 ± 0.0281 ± 0.0016
		0.23 – 0.36	4.55	0.208	0.426	0.322	0.291	0.839	-0.1517 ± 0.0361 ± 0.0026	-0.1517 ± 0.0361 ± 0.0026
		0.36 – 0.54	4.80	0.211	0.450	0.323	0.440	0.816	-0.0507 ± 0.0434 ± 0.0013	-0.0507 ± 0.0434 ± 0.0013
		0.54 – 2.00	4.79	0.204	0.464	0.324	0.679	0.802	-0.1391 ± 0.0758 ± 0.0071	-0.1391 ± 0.0758 ± 0.0071
	0.37 – 0.49	0.00 – 0.23	4.26	0.197	0.414	0.422	0.149	0.852	-0.0504 ± 0.0328 ± 0.0063	-0.0504 ± 0.0328 ± 0.0063
		0.23 – 0.36	4.31	0.203	0.410	0.424	0.294	0.852	-0.0491 ± 0.0366 ± 0.0031	-0.0491 ± 0.0366 ± 0.0031
		0.36 – 0.54	4.59	0.212	0.423	0.425	0.438	0.840	-0.1010 ± 0.0440 ± 0.0189	-0.1010 ± 0.0440 ± 0.0189
		0.54 – 2.00	4.78	0.208	0.453	0.426	0.712	0.809	-0.1434 ± 0.0563 ± 0.0060	-0.1434 ± 0.0563 ± 0.0060
	0.49 – 0.70	0.00 – 0.23	4.25	0.197	0.413	0.574	0.152	0.852	0.0318 ± 0.0398 ± 0.0111	0.0318 ± 0.0398 ± 0.0111
		0.23 – 0.36	4.13	0.198	0.400	0.574	0.295	0.861	-0.0413 ± 0.0417 ± 0.0071	-0.0413 ± 0.0417 ± 0.0071
		0.36 – 0.54	4.25	0.203	0.405	0.579	0.443	0.855	0.0282 ± 0.0414 ± 0.0013	0.0282 ± 0.0414 ± 0.0013
		0.54 – 2.00	4.67	0.210	0.437	0.581	0.726	0.825	-0.2059 ± 0.0495 ± 0.0006	-0.2059 ± 0.0495 ± 0.0006

Table 10. Three-dimensionally binned SFA and CSA amplitudes of the $\sin(\phi+\phi_S)$ modulation for π^- as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin			Average kinematics						K^+	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(\phi+\phi_S)/\epsilon \rangle_{U\perp}$	$2\langle \sin(\phi+\phi_S) \rangle_{U\perp}$
0.023 – 0.072	0.20 – 0.28	0.00 – 0.23	1.48	0.052	0.565	0.239	0.149	0.705	0.0357 ± 0.1234 ± 0.0026	0.0357 ± 0.1234 ± 0.0026
		0.23 – 0.36	1.54	0.048	0.638	0.237	0.297	0.612	0.0826 ± 0.0860 ± 0.0003	0.0826 ± 0.0860 ± 0.0003
		0.36 – 0.54	1.55	0.046	0.674	0.239	0.444	0.562	-0.0157 ± 0.0551 ± 0.0034	-0.0157 ± 0.0551 ± 0.0034
		0.54 – 2.00	1.59	0.043	0.734	0.242	0.670	0.476	0.0661 ± 0.0820 ± 0.0147	0.0661 ± 0.0820 ± 0.0147
	0.28 – 0.37	0.00 – 0.23	1.44	0.054	0.529	0.321	0.150	0.747	0.0159 ± 0.1093 ± 0.0019	0.0159 ± 0.1093 ± 0.0019
		0.23 – 0.36	1.51	0.050	0.603	0.322	0.298	0.657	0.1329 ± 0.1682 ± 0.0169	0.1329 ± 0.1682 ± 0.0169
		0.36 – 0.54	1.54	0.047	0.645	0.322	0.448	0.601	0.1273 ± 0.0679 ± 0.0101	0.1273 ± 0.0679 ± 0.0101
		0.54 – 2.00	1.56	0.044	0.701	0.326	0.722	0.523	0.0271 ± 0.0589 ± 0.0198	0.0271 ± 0.0589 ± 0.0198
	0.37 – 0.49	0.00 – 0.23	1.43	0.055	0.511	0.422	0.148	0.769	0.0564 ± 0.0988 ± 0.0002	0.0564 ± 0.0988 ± 0.0002
		0.23 – 0.36	1.47	0.052	0.557	0.424	0.297	0.713	0.2020 ± 0.1900 ± 0.0274	0.2020 ± 0.1900 ± 0.0274
		0.36 – 0.54	1.51	0.050	0.608	0.424	0.449	0.651	0.2437 ± 0.1184 ± 0.0466	0.2437 ± 0.1184 ± 0.0466
		0.54 – 2.00	1.56	0.046	0.671	0.428	0.763	0.565	0.0031 ± 0.0568 ± 0.0106	0.0031 ± 0.0568 ± 0.0106
	0.49 – 0.70	0.00 – 0.23	1.42	0.057	0.493	0.572	0.150	0.787	-0.0220 ± 0.1116 ± 0.0230	-0.0220 ± 0.1116 ± 0.0230
		0.23 – 0.36	1.44	0.054	0.534	0.573	0.298	0.740	-0.3800 ± 0.1724 ± 0.0319	-0.3800 ± 0.1724 ± 0.0319
		0.36 – 0.54	1.49	0.051	0.587	0.576	0.452	0.675	0.0712 ± 0.1850 ± 0.0279	0.0712 ± 0.1850 ± 0.0279
		0.54 – 2.00	1.53	0.048	0.637	0.580	0.805	0.612	0.1038 ± 0.0657 ± 0.0193	0.1038 ± 0.0657 ± 0.0193
0.072 – 0.098	0.20 – 0.28	0.00 – 0.23	2.21	0.084	0.508	0.241	0.142	0.770	-0.2411 ± 0.1137 ± 0.0063	-0.2411 ± 0.1137 ± 0.0063
		0.23 – 0.36	2.43	0.084	0.562	0.240	0.295	0.709	-0.1288 ± 0.1052 ± 0.0040	-0.1288 ± 0.1052 ± 0.0040
		0.36 – 0.54	2.50	0.084	0.578	0.241	0.440	0.683	0.0000 ± 0.0967 ± 0.0096	0.0000 ± 0.0967 ± 0.0096
		0.54 – 2.00	2.72	0.084	0.630	0.244	0.652	0.624	0.0287 ± 0.1776 ± 0.0378	0.0287 ± 0.1776 ± 0.0378
	0.28 – 0.37	0.00 – 0.23	1.98	0.084	0.455	0.323	0.142	0.816	0.0331 ± 0.0884 ± 0.0093	0.0331 ± 0.0884 ± 0.0093
		0.23 – 0.36	2.21	0.084	0.510	0.324	0.293	0.762	-0.1272 ± 0.1575 ± 0.0176	-0.1272 ± 0.1575 ± 0.0176
		0.36 – 0.54	2.38	0.084	0.550	0.324	0.446	0.714	-0.0422 ± 0.0988 ± 0.0072	-0.0422 ± 0.0988 ± 0.0072
		0.54 – 2.00	2.54	0.084	0.587	0.327	0.690	0.669	0.1767 ± 0.1055 ± 0.0156	0.1767 ± 0.1055 ± 0.0156
	0.37 – 0.49	0.00 – 0.23	1.88	0.085	0.429	0.423	0.145	0.839	0.0953 ± 0.0762 ± 0.0135	0.0953 ± 0.0762 ± 0.0135
		0.23 – 0.36	2.07	0.084	0.475	0.425	0.294	0.795	0.0941 ± 0.1327 ± 0.0065	0.0941 ± 0.1327 ± 0.0065
		0.36 – 0.54	2.23	0.084	0.512	0.427	0.445	0.758	-0.2757 ± 0.1514 ± 0.0152	-0.2757 ± 0.1514 ± 0.0152
		0.54 – 2.00	2.44	0.084	0.566	0.430	0.735	0.695	-0.0758 ± 0.0870 ± 0.0260	-0.0758 ± 0.0870 ± 0.0260
	0.49 – 0.70	0.00 – 0.23	1.88	0.085	0.427	0.577	0.150	0.842	0.0190 ± 0.0893 ± 0.0181	0.0190 ± 0.0893 ± 0.0181
		0.23 – 0.36	1.94	0.084	0.447	0.575	0.297	0.820	0.2747 ± 0.1100 ± 0.0227	0.2747 ± 0.1100 ± 0.0227
		0.36 – 0.54	2.06	0.085	0.470	0.583	0.446	0.798	0.0671 ± 0.1274 ± 0.0324	0.0671 ± 0.1274 ± 0.0324
		0.54 – 2.00	2.33	0.084	0.538	0.587	0.768	0.728	0.0841 ± 0.0915 ± 0.0214	0.0841 ± 0.0915 ± 0.0214
0.098 – 0.138	0.20 – 0.28	0.00 – 0.23	2.96	0.116	0.494	0.241	0.139	0.785	-0.1006 ± 0.0881 ± 0.0030	-0.1006 ± 0.0881 ± 0.0030
		0.23 – 0.36	3.31	0.116	0.554	0.239	0.290	0.718	0.0241 ± 0.1254 ± 0.0127	0.0241 ± 0.1254 ± 0.0127
		0.36 – 0.54	3.25	0.115	0.548	0.240	0.443	0.720	0.1920 ± 0.1103 ± 0.0098	0.1920 ± 0.1103 ± 0.0098
		0.54 – 2.00	3.53	0.115	0.596	0.245	0.650	0.664	0.1516 ± 0.2423 ± 0.0492	0.1516 ± 0.2423 ± 0.0492
	0.28 – 0.37	0.00 – 0.23	2.64	0.116	0.441	0.324	0.142	0.829	0.0037 ± 0.0679 ± 0.0024	0.0037 ± 0.0679 ± 0.0024
		0.23 – 0.36	2.91	0.116	0.485	0.326	0.292	0.787	0.0790 ± 0.1295 ± 0.0165	0.0790 ± 0.1295 ± 0.0165
		0.36 – 0.54	3.08	0.115	0.519	0.323	0.446	0.746	0.0954 ± 0.0989 ± 0.0285	0.0954 ± 0.0989 ± 0.0285
		0.54 – 2.00	3.20	0.116	0.535	0.327	0.682	0.726	0.0752 ± 0.1281 ± 0.0466	0.0752 ± 0.1281 ± 0.0466
	0.37 – 0.49	0.00 – 0.23	2.54	0.116	0.425	0.424	0.148	0.841	-0.0579 ± 0.0703 ± 0.0113	-0.0579 ± 0.0703 ± 0.0113
		0.23 – 0.36	2.66	0.116	0.441	0.427	0.291	0.824	0.0463 ± 0.0888 ± 0.0203	0.0463 ± 0.0888 ± 0.0203
		0.36 – 0.54	3.00	0.117	0.497	0.428	0.442	0.773	0.1039 ± 0.1186 ± 0.0122	0.1039 ± 0.1186 ± 0.0122
		0.54 – 2.00	3.21	0.115	0.539	0.428	0.716	0.723	0.0431 ± 0.0935 ± 0.0228	0.0431 ± 0.0935 ± 0.0228
	0.49 – 0.70	0.00 – 0.23	2.47	0.116	0.412	0.574	0.150	0.851	0.0121 ± 0.0760 ± 0.0210	0.0121 ± 0.0760 ± 0.0210
		0.23 – 0.36	2.50	0.116	0.418	0.577	0.296	0.845	0.1281 ± 0.0863 ± 0.0189	0.1281 ± 0.0863 ± 0.0189
		0.36 – 0.54	2.70	0.116	0.451	0.583	0.443	0.815	0.0885 ± 0.0925 ± 0.0175	0.0885 ± 0.0925 ± 0.0175
		0.54 – 2.00	3.06	0.115	0.514	0.588	0.752	0.752	0.1304 ± 0.0894 ± 0.0277	0.1304 ± 0.0894 ± 0.0277
0.138 – 0.600	0.20 – 0.28	0.00 – 0.23	5.15	0.207	0.485	0.242	0.138	0.795	0.0259 ± 0.0653 ± 0.0179	0.0259 ± 0.0653 ± 0.0179
		0.23 – 0.36	5.33	0.208	0.505	0.243	0.292	0.773	0.0559 ± 0.1011 ± 0.0042	0.0559 ± 0.1011 ± 0.0042
		0.36 – 0.54	5.06	0.196	0.508	0.241	0.445	0.765	0.0884 ± 0.1330 ± 0.0226	0.0884 ± 0.1330 ± 0.0226
		0.54 – 2.00	5.22	0.211	0.493	0.246	0.645	0.779	-0.4170 ± 0.3166 ± 0.0530	-0.4170 ± 0.3166 ± 0.0530
	0.28 – 0.37	0.00 – 0.23	4.76	0.204	0.449	0.323	0.142	0.825	0.0379 ± 0.0563 ± 0.0047	0.0379 ± 0.0563 ± 0.0047
		0.23 – 0.36	5.01	0.211	0.462	0.325	0.289	0.810	0.0614 ± 0.0758 ± 0.0161	0.0614 ± 0.0758 ± 0.0161
		0.36 – 0.54	5.04	0.203	0.488	0.325	0.443	0.783	0.0632 ± 0.0888 ± 0.0001	0.0632 ± 0.0888 ± 0.0001
		0.54 – 2.00	4.69	0.198	0.464	0.327	0.681	0.798	0.1476 ± 0.1523 ± 0.0071	0.1476 ± 0.1523 ± 0.0071
	0.37 – 0.49	0.00 – 0.23	4.63	0.204	0.435	0.424	0.150	0.836	0.0777 ± 0.0566 ± 0.0041	0.0777 ± 0.0566 ± 0.0041
		0.23 – 0.36	4.62	0.204	0.437	0.425	0.292	0.831	0.1402 ± 0.0638 ± 0.0109	0.1402 ± 0.0638 ± 0.0109
		0.36 – 0.54	4.91	0.210	0.458	0.426	0.439	0.812	0.0757 ± 0.0720 ± 0.0065	0.0757 ± 0.0720 ± 0.0065
		0.54 – 2.00	5.02	0.204	0.483	0.428	0.707	0.784	-0.0233 ± 0.0959 ± 0.0104	-0.0233 ± 0.0959 ± 0.0104
	0.49 – 0.70	0.00 – 0.23	4.55	0.204	0.426	0.576	0.149	0.843	-0.0010 ± 0.0654 ± 0.0098	-0.0010 ± 0.0654 ± 0.0098
		0.23 – 0.36	4.52	0.206	0.422	0.577	0.296	0.844	0.1094 ± 0.0659 ± 0.0001	0.1094 ± 0.0659 ± 0.0001
		0.36 – 0.54	4.63	0.207	0.435	0.583	0.443	0.831	0.1763 ± 0.0625 ± 0.0022	0.1763 ± 0.0625 ± 0.0022
		0.54 – 2.00	5.06	0.210	0.473	0.589	0.731	0.796	0.2043 ± 0.0710 ± 0.0155	0.2043 ± 0.0710 ± 0.0155

Table 11. Three-dimensionally binned SFA and CSA amplitudes of the $\sin(\phi+\phi_S)$ modulation for K^+ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin			Average kinematics						K^-	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(\phi+\phi_S)/\epsilon \rangle_{U\perp}$	$2\langle \sin(\phi+\phi_S) \rangle_{U\perp}$
0.023 – 0.072	0.20 – 0.28	0.00 – 0.23	1.48	0.051	0.575	0.236	0.152	0.692	-0.1091 ± 0.1754 ± 0.0190	-0.1091 ± 0.1754 ± 0.0190
		0.23 – 0.36	1.51	0.047	0.646	0.236	0.298	0.601	-0.1934 ± 0.0973 ± 0.0109	-0.1934 ± 0.0973 ± 0.0109
		0.36 – 0.54	1.54	0.045	0.684	0.237	0.444	0.547	0.0785 ± 0.0715 ± 0.0006	0.0785 ± 0.0715 ± 0.0006
		0.54 – 2.00	1.61	0.043	0.744	0.242	0.666	0.461	-0.1066 ± 0.1060 ± 0.0016	-0.1066 ± 0.1060 ± 0.0016
	0.28 – 0.37	0.00 – 0.23	1.45	0.053	0.537	0.319	0.151	0.738	-0.2939 ± 0.1458 ± 0.0011	-0.2939 ± 0.1458 ± 0.0011
		0.23 – 0.36	1.50	0.049	0.608	0.320	0.296	0.650	0.0373 ± 0.2379 ± 0.0328	0.0373 ± 0.2379 ± 0.0328
		0.36 – 0.54	1.51	0.047	0.644	0.319	0.449	0.602	0.0555 ± 0.0910 ± 0.0147	0.0555 ± 0.0910 ± 0.0147
		0.54 – 2.00	1.56	0.044	0.701	0.324	0.724	0.523	0.1110 ± 0.0808 ± 0.0002	0.1110 ± 0.0808 ± 0.0002
	0.37 – 0.49	0.00 – 0.23	1.40	0.054	0.513	0.424	0.146	0.768	-0.1178 ± 0.1562 ± 0.0195	-0.1178 ± 0.1562 ± 0.0195
		0.23 – 0.36	1.48	0.051	0.579	0.422	0.298	0.689	0.0696 ± 0.2586 ± 0.0147	0.0696 ± 0.2586 ± 0.0147
		0.36 – 0.54	1.53	0.049	0.622	0.423	0.448	0.633	0.2738 ± 0.1674 ± 0.0008	0.2738 ± 0.1674 ± 0.0008
		0.54 – 2.00	1.54	0.045	0.674	0.425	0.770	0.562	-0.0877 ± 0.0821 ± 0.0039	-0.0877 ± 0.0821 ± 0.0039
	0.49 – 0.70	0.00 – 0.23	1.41	0.055	0.508	0.562	0.151	0.771	-0.2971 ± 0.1763 ± 0.0075	-0.2971 ± 0.1763 ± 0.0075
		0.23 – 0.36	1.44	0.052	0.550	0.566	0.298	0.721	0.0735 ± 0.2330 ± 0.0099	0.0735 ± 0.2330 ± 0.0099
		0.36 – 0.54	1.49	0.050	0.595	0.572	0.446	0.664	-0.2738 ± 0.2841 ± 0.0025	-0.2738 ± 0.2841 ± 0.0025
		0.54 – 2.00	1.53	0.046	0.662	0.569	0.799	0.578	0.1458 ± 0.1100 ± 0.0111	0.1458 ± 0.1100 ± 0.0111
0.072 – 0.098	0.20 – 0.28	0.00 – 0.23	2.18	0.084	0.503	0.239	0.139	0.775	-0.0183 ± 0.1609 ± 0.0164	-0.0183 ± 0.1609 ± 0.0164
		0.23 – 0.36	2.46	0.084	0.568	0.237	0.294	0.701	0.1484 ± 0.1712 ± 0.0261	0.1484 ± 0.1712 ± 0.0261
		0.36 – 0.54	2.54	0.084	0.586	0.237	0.440	0.677	0.1542 ± 0.1277 ± 0.0038	0.1542 ± 0.1277 ± 0.0038
		0.54 – 2.00	2.75	0.084	0.637	0.242	0.648	0.614	0.0047 ± 0.2436 ± 0.0156	0.0047 ± 0.2436 ± 0.0156
	0.28 – 0.37	0.00 – 0.23	1.95	0.084	0.448	0.323	0.138	0.824	0.1195 ± 0.1205 ± 0.0056	0.1195 ± 0.1205 ± 0.0056
		0.23 – 0.36	2.24	0.084	0.518	0.322	0.292	0.752	0.1560 ± 0.2644 ± 0.0286	0.1560 ± 0.2644 ± 0.0286
		0.36 – 0.54	2.40	0.084	0.555	0.321	0.444	0.712	-0.0035 ± 0.1390 ± 0.0161	-0.0035 ± 0.1390 ± 0.0161
		0.54 – 2.00	2.48	0.084	0.573	0.324	0.693	0.689	-0.3070 ± 0.1647 ± 0.0064	-0.3070 ± 0.1647 ± 0.0064
	0.37 – 0.49	0.00 – 0.23	1.84	0.084	0.426	0.424	0.143	0.842	0.0633 ± 0.1273 ± 0.0025	0.0633 ± 0.1273 ± 0.0025
		0.23 – 0.36	2.06	0.084	0.475	0.424	0.294	0.794	0.3670 ± 0.1981 ± 0.0048	0.3670 ± 0.1981 ± 0.0048
		0.36 – 0.54	2.27	0.083	0.528	0.424	0.443	0.743	0.2672 ± 0.2248 ± 0.0151	0.2672 ± 0.2248 ± 0.0151
		0.54 – 2.00	2.45	0.084	0.566	0.423	0.727	0.695	-0.0561 ± 0.1402 ± 0.0074	-0.0561 ± 0.1402 ± 0.0074
	0.49 – 0.70	0.00 – 0.23	1.89	0.085	0.431	0.567	0.150	0.837	-0.0221 ± 0.1615 ± 0.0208	-0.0221 ± 0.1615 ± 0.0208
		0.23 – 0.36	2.00	0.085	0.455	0.570	0.295	0.811	0.3095 ± 0.1738 ± 0.0046	0.3095 ± 0.1738 ± 0.0046
		0.36 – 0.54	2.16	0.084	0.495	0.577	0.440	0.775	0.3934 ± 0.2458 ± 0.0384	0.3934 ± 0.2458 ± 0.0384
		0.54 – 2.00	2.42	0.084	0.556	0.570	0.772	0.707	-0.0801 ± 0.1570 ± 0.0198	-0.0801 ± 0.1570 ± 0.0198
0.098 – 0.138	0.20 – 0.28	0.00 – 0.23	3.02	0.116	0.505	0.240	0.138	0.774	-0.0838 ± 0.1323 ± 0.0066	-0.0838 ± 0.1323 ± 0.0066
		0.23 – 0.36	3.26	0.115	0.549	0.241	0.290	0.727	-0.2354 ± 0.2125 ± 0.0288	-0.2354 ± 0.2125 ± 0.0288
		0.36 – 0.54	3.30	0.115	0.556	0.238	0.444	0.713	0.1270 ± 0.1548 ± 0.0118	0.1270 ± 0.1548 ± 0.0118
		0.54 – 2.00	3.61	0.115	0.607	0.243	0.649	0.655	0.3432 ± 0.3070 ± 0.0523	0.3432 ± 0.3070 ± 0.0523
	0.28 – 0.37	0.00 – 0.23	2.69	0.116	0.450	0.323	0.142	0.819	-0.0501 ± 0.1147 ± 0.0003	-0.0501 ± 0.1147 ± 0.0003
		0.23 – 0.36	2.98	0.116	0.501	0.322	0.294	0.769	0.2420 ± 0.2076 ± 0.0030	0.2420 ± 0.2076 ± 0.0030
		0.36 – 0.54	3.06	0.115	0.516	0.324	0.450	0.750	-0.0743 ± 0.1512 ± 0.0034	-0.0743 ± 0.1512 ± 0.0034
		0.54 – 2.00	3.34	0.116	0.559	0.324	0.694	0.703	-0.1410 ± 0.1788 ± 0.0150	-0.1410 ± 0.1788 ± 0.0150
	0.37 – 0.49	0.00 – 0.23	2.42	0.115	0.408	0.423	0.149	0.854	-0.2185 ± 0.1175 ± 0.0143	-0.2185 ± 0.1175 ± 0.0143
		0.23 – 0.36	2.69	0.117	0.447	0.427	0.293	0.819	0.2901 ± 0.1622 ± 0.0088	0.2901 ± 0.1622 ± 0.0088
		0.36 – 0.54	2.94	0.116	0.491	0.428	0.442	0.778	0.0397 ± 0.2045 ± 0.0365	0.0397 ± 0.2045 ± 0.0365
		0.54 – 2.00	3.19	0.114	0.540	0.424	0.741	0.723	0.1564 ± 0.1487 ± 0.0017	0.1564 ± 0.1487 ± 0.0017
	0.49 – 0.70	0.00 – 0.23	2.43	0.115	0.407	0.563	0.149	0.854	-0.0310 ± 0.1537 ± 0.0009	-0.0310 ± 0.1537 ± 0.0009
		0.23 – 0.36	2.47	0.115	0.416	0.572	0.295	0.848	0.0717 ± 0.1615 ± 0.0041	0.0717 ± 0.1615 ± 0.0041
		0.36 – 0.54	2.72	0.116	0.453	0.577	0.435	0.813	-0.1007 ± 0.1793 ± 0.0092	-0.1007 ± 0.1793 ± 0.0092
		0.54 – 2.00	3.08	0.115	0.517	0.574	0.764	0.750	-0.0022 ± 0.1905 ± 0.0077	-0.0022 ± 0.1905 ± 0.0077
0.138 – 0.600	0.20 – 0.28	0.00 – 0.23	4.98	0.201	0.481	0.241	0.144	0.800	0.0233 ± 0.0912 ± 0.0045	0.0233 ± 0.0912 ± 0.0045
		0.23 – 0.36	5.30	0.206	0.507	0.241	0.290	0.770	-0.0342 ± 0.1455 ± 0.0034	-0.0342 ± 0.1455 ± 0.0034
		0.36 – 0.54	5.32	0.204	0.518	0.239	0.449	0.757	0.3094 ± 0.1658 ± 0.0296	0.3094 ± 0.1658 ± 0.0296
		0.54 – 2.00	5.44	0.205	0.527	0.245	0.663	0.747	0.3753 ± 0.3929 ± 0.1028	0.3753 ± 0.3929 ± 0.1028
	0.28 – 0.37	0.00 – 0.23	4.71	0.203	0.451	0.322	0.146	0.822	0.0824 ± 0.0940 ± 0.0167	0.0824 ± 0.0940 ± 0.0167
		0.23 – 0.36	4.92	0.209	0.462	0.325	0.291	0.809	0.2171 ± 0.1194 ± 0.0232	0.2171 ± 0.1194 ± 0.0232
		0.36 – 0.54	4.90	0.205	0.473	0.325	0.441	0.795	-0.2724 ± 0.1432 ± 0.0370	-0.2724 ± 0.1432 ± 0.0370
		0.54 – 2.00	5.07	0.200	0.503	0.324	0.691	0.765	0.0005 ± 0.2092 ± 0.0830	0.0005 ± 0.2092 ± 0.0830
	0.37 – 0.49	0.00 – 0.23	4.35	0.195	0.430	0.420	0.149	0.839	0.0139 ± 0.1180 ± 0.0009	0.0139 ± 0.1180 ± 0.0009
		0.23 – 0.36	4.49	0.205	0.422	0.423	0.293	0.843	-0.1700 ± 0.1262 ± 0.0039	-0.1700 ± 0.1262 ± 0.0039
		0.36 – 0.54	4.75	0.207	0.450	0.426	0.437	0.817	0.0355 ± 0.1330 ± 0.0036	0.0355 ± 0.1330 ± 0.0036
		0.54 – 2.00	4.87	0.203	0.474	0.425	0.728	0.792	-0.1231 ± 0.1719 ± 0.0438	-0.1231 ± 0.1719 ± 0.0438
	0.49 – 0.70	0.00 – 0.23	4.39	0.196	0.432	0.562	0.154	0.839	-0.1493 ± 0.1426 ± 0.0210	-0.1493 ± 0.1426 ± 0.0210
		0.23 – 0.36	4.35	0.201	0.419	0.571	0.294	0.846	0.2884 ± 0.1634 ± 0.0161	0.2884 ± 0.1634 ± 0.0161
		0.36 – 0.54	4.56	0.207	0.429	0.577	0.440	0.838	-0.1045 ± 0.1380 ± 0.0113	-0.1045 ± 0.1380 ± 0.0113
		0.54 – 2.00	4.85	0.204	0.470	0.579	0.735	0.796	0.0424 ± 0.1577 ± 0.0292	0.0424 ± 0.1577 ± 0.0292

Table 12. Three-dimensionally binned SFA and CSA amplitudes of the $\sin(\phi+\phi_S)$ modulation for K^- as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin			Average kinematics						p	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(\phi+\phi_S)/\epsilon \rangle_{U\perp}$	$2\langle \sin(\phi+\phi_S) \rangle_{U\perp}$
0.023 – 0.073	0.20 – 0.34	0.00 – 0.24	1.60	0.048	0.656	0.281	0.167	0.598	0.1243 ± 0.2070 ± 0.0172	0.1243 ± 0.2070 ± 0.0172
		0.24 – 0.40	1.61	0.045	0.698	0.274	0.327	0.535	-0.0490 ± 0.0979 ± 0.0098	-0.0490 ± 0.0979 ± 0.0098
		0.40 – 0.57	1.60	0.044	0.713	0.271	0.483	0.512	0.0003 ± 0.0615 ± 0.0030	0.0003 ± 0.0615 ± 0.0030
		0.57 – 2.00	1.60	0.043	0.734	0.276	0.728	0.480	0.0343 ± 0.0608 ± 0.0142	0.0343 ± 0.0608 ± 0.0142
	0.34 – 0.43	0.00 – 0.24	1.48	0.053	0.544	0.384	0.157	0.736	-0.0477 ± 0.1221 ± 0.0057	-0.0477 ± 0.1221 ± 0.0057
		0.24 – 0.40	1.51	0.050	0.603	0.384	0.322	0.659	0.2441 ± 0.2013 ± 0.0089	0.2441 ± 0.2013 ± 0.0089
		0.40 – 0.57	1.54	0.049	0.632	0.383	0.483	0.620	0.0481 ± 0.0983 ± 0.0109	0.0481 ± 0.0983 ± 0.0109
		0.57 – 2.00	1.54	0.046	0.669	0.384	0.766	0.568	-0.0878 ± 0.0626 ± 0.0083	-0.0878 ± 0.0626 ± 0.0083
	0.43 – 0.52	0.00 – 0.24	1.43	0.056	0.503	0.473	0.159	0.777	-0.0353 ± 0.1190 ± 0.0343	-0.0353 ± 0.1190 ± 0.0343
		0.24 – 0.40	1.47	0.052	0.567	0.471	0.322	0.699	-0.2523 ± 0.2040 ± 0.0016	-0.2523 ± 0.2040 ± 0.0016
		0.40 – 0.57	1.50	0.050	0.597	0.472	0.481	0.663	0.0383 ± 0.1749 ± 0.0263	0.0383 ± 0.1749 ± 0.0263
		0.57 – 2.00	1.52	0.047	0.641	0.471	0.796	0.604	-0.0331 ± 0.0774 ± 0.0052	-0.0331 ± 0.0774 ± 0.0052
	0.52 – 0.70	0.00 – 0.24	1.40	0.057	0.487	0.588	0.153	0.795	-0.1053 ± 0.1315 ± 0.0005	-0.1053 ± 0.1315 ± 0.0005
		0.24 – 0.40	1.45	0.055	0.527	0.587	0.321	0.747	-0.3278 ± 0.1907 ± 0.0071	-0.3278 ± 0.1907 ± 0.0071
		0.40 – 0.57	1.46	0.052	0.561	0.589	0.482	0.707	0.3556 ± 0.2237 ± 0.0096	0.3556 ± 0.2237 ± 0.0096
		0.57 – 2.00	1.50	0.049	0.607	0.591	0.808	0.649	0.1472 ± 0.0850 ± 0.0148	0.1472 ± 0.0850 ± 0.0148
0.073 – 0.107	0.20 – 0.34	0.00 – 0.24	2.83	0.089	0.617	0.293	0.158	0.653	-0.2052 ± 0.1916 ± 0.0225	-0.2052 ± 0.1916 ± 0.0225
		0.24 – 0.40	2.91	0.088	0.638	0.285	0.321	0.624	0.0207 ± 0.1897 ± 0.0255	0.0207 ± 0.1897 ± 0.0255
		0.40 – 0.57	3.01	0.088	0.661	0.279	0.481	0.592	0.0090 ± 0.1154 ± 0.0143	0.0090 ± 0.1154 ± 0.0143
		0.57 – 2.00	3.03	0.088	0.666	0.282	0.718	0.584	-0.0844 ± 0.1153 ± 0.0287	-0.0844 ± 0.1153 ± 0.0287
	0.34 – 0.43	0.00 – 0.24	2.34	0.089	0.509	0.385	0.148	0.775	-0.0023 ± 0.0982 ± 0.0216	-0.0023 ± 0.0982 ± 0.0216
		0.24 – 0.40	2.49	0.088	0.545	0.385	0.317	0.732	0.0907 ± 0.1734 ± 0.0230	0.0907 ± 0.1734 ± 0.0230
		0.40 – 0.57	2.53	0.088	0.558	0.385	0.480	0.717	-0.1148 ± 0.1356 ± 0.0317	-0.1148 ± 0.1356 ± 0.0317
		0.57 – 2.00	2.63	0.088	0.575	0.385	0.744	0.694	0.1401 ± 0.0999 ± 0.0168	0.1401 ± 0.0999 ± 0.0168
	0.43 – 0.52	0.00 – 0.24	2.10	0.089	0.458	0.473	0.155	0.817	-0.0698 ± 0.0940 ± 0.0187	-0.0698 ± 0.0940 ± 0.0187
		0.24 – 0.40	2.22	0.088	0.485	0.473	0.319	0.789	0.2039 ± 0.1296 ± 0.0284	0.2039 ± 0.1296 ± 0.0284
		0.40 – 0.57	2.34	0.088	0.515	0.474	0.477	0.759	-0.0643 ± 0.1722 ± 0.0557	-0.0643 ± 0.1722 ± 0.0557
		0.57 – 2.00	2.45	0.088	0.538	0.472	0.773	0.731	-0.1632 ± 0.1060 ± 0.0144	-0.1632 ± 0.1060 ± 0.0144
	0.52 – 0.70	0.00 – 0.24	1.89	0.089	0.410	0.592	0.156	0.856	-0.0147 ± 0.0902 ± 0.0045	-0.0147 ± 0.0902 ± 0.0045
		0.24 – 0.40	1.95	0.089	0.427	0.593	0.320	0.839	-0.1231 ± 0.0970 ± 0.0040	-0.1231 ± 0.0970 ± 0.0040
		0.40 – 0.57	2.05	0.088	0.450	0.594	0.481	0.817	-0.0319 ± 0.1536 ± 0.0056	-0.0319 ± 0.1536 ± 0.0056
		0.57 – 2.00	2.24	0.088	0.494	0.598	0.781	0.772	0.1657 ± 0.1046 ± 0.0132	0.1657 ± 0.1046 ± 0.0132
0.107 – 0.157	0.20 – 0.34	0.00 – 0.24	3.97	0.128	0.600	0.295	0.156	0.677	-0.2988 ± 0.1606 ± 0.0181	-0.2988 ± 0.1606 ± 0.0181
		0.24 – 0.40	4.13	0.129	0.622	0.288	0.321	0.648	-0.3504 ± 0.1951 ± 0.0106	-0.3504 ± 0.1951 ± 0.0106
		0.40 – 0.57	4.27	0.128	0.644	0.283	0.481	0.617	-0.0364 ± 0.1335 ± 0.0006	-0.0364 ± 0.1335 ± 0.0006
		0.57 – 2.00	4.24	0.127	0.646	0.288	0.719	0.613	-0.1150 ± 0.1642 ± 0.0235	-0.1150 ± 0.1642 ± 0.0235
	0.34 – 0.43	0.00 – 0.24	3.38	0.130	0.504	0.387	0.152	0.780	-0.2740 ± 0.0917 ± 0.0041	-0.2740 ± 0.0917 ± 0.0041
		0.24 – 0.40	3.48	0.129	0.523	0.388	0.316	0.759	0.0287 ± 0.1293 ± 0.0495	0.0287 ± 0.1293 ± 0.0495
		0.40 – 0.57	3.69	0.128	0.555	0.386	0.477	0.722	0.0241 ± 0.1474 ± 0.0105	0.0241 ± 0.1474 ± 0.0105
		0.57 – 2.00	3.71	0.127	0.563	0.385	0.754	0.712	0.1816 ± 0.1399 ± 0.0144	0.1816 ± 0.1399 ± 0.0144
	0.43 – 0.52	0.00 – 0.24	3.06	0.129	0.457	0.474	0.156	0.820	0.0806 ± 0.0854 ± 0.0134	0.0806 ± 0.0854 ± 0.0134
		0.24 – 0.40	3.14	0.130	0.469	0.475	0.317	0.807	-0.0958 ± 0.1013 ± 0.0133	-0.0958 ± 0.1013 ± 0.0133
		0.40 – 0.57	3.29	0.129	0.492	0.472	0.478	0.784	-0.1788 ± 0.1521 ± 0.0088	-0.1788 ± 0.1521 ± 0.0088
		0.57 – 2.00	3.45	0.128	0.524	0.473	0.771	0.747	-0.0720 ± 0.1301 ± 0.0121	-0.0720 ± 0.1301 ± 0.0121
	0.52 – 0.70	0.00 – 0.24	2.75	0.129	0.413	0.594	0.154	0.852	-0.0452 ± 0.0859 ± 0.0035	-0.0452 ± 0.0859 ± 0.0035
		0.24 – 0.40	2.77	0.129	0.415	0.594	0.320	0.848	0.0585 ± 0.0845 ± 0.0133	0.0585 ± 0.0845 ± 0.0133
		0.40 – 0.57	2.85	0.130	0.425	0.602	0.479	0.840	0.0304 ± 0.1148 ± 0.0093	0.0304 ± 0.1148 ± 0.0093
		0.57 – 2.00	3.17	0.129	0.476	0.602	0.769	0.788	-0.1130 ± 0.1107 ± 0.0171	-0.1130 ± 0.1107 ± 0.0171
0.157 – 0.600	0.20 – 0.34	0.00 – 0.24	6.65	0.229	0.566	0.301	0.155	0.717	0.0590 ± 0.1163 ± 0.0307	0.0590 ± 0.1163 ± 0.0307
		0.24 – 0.40	6.49	0.219	0.579	0.298	0.317	0.703	-0.0863 ± 0.1525 ± 0.0270	-0.0863 ± 0.1525 ± 0.0270
		0.40 – 0.57	6.54	0.211	0.608	0.290	0.476	0.664	-0.3408 ± 0.1707 ± 0.0005	-0.3408 ± 0.1707 ± 0.0005
		0.57 – 2.00	6.59	0.216	0.597	0.292	0.719	0.678	0.0524 ± 0.2515 ± 0.0122	0.0524 ± 0.2515 ± 0.0122
	0.34 – 0.43	0.00 – 0.24	5.84	0.231	0.492	0.386	0.154	0.793	-0.0118 ± 0.0757 ± 0.0074	-0.0118 ± 0.0757 ± 0.0074
		0.24 – 0.40	5.96	0.233	0.499	0.387	0.315	0.786	-0.0657 ± 0.0869 ± 0.0242	-0.0657 ± 0.0869 ± 0.0242
		0.40 – 0.57	5.97	0.230	0.509	0.389	0.473	0.774	-0.0549 ± 0.1267 ± 0.0091	-0.0549 ± 0.1267 ± 0.0091
		0.57 – 2.00	6.10	0.235	0.511	0.386	0.764	0.771	-0.1395 ± 0.1786 ± 0.0500	-0.1395 ± 0.1786 ± 0.0500
	0.43 – 0.52	0.00 – 0.24	5.22	0.228	0.444	0.474	0.153	0.833	-0.0233 ± 0.0758 ± 0.0212	-0.0233 ± 0.0758 ± 0.0212
		0.24 – 0.40	5.38	0.234	0.450	0.473	0.316	0.826	-0.0039 ± 0.0792 ± 0.0408	-0.0039 ± 0.0792 ± 0.0408
		0.40 – 0.57	5.47	0.234	0.458	0.476	0.476	0.818	0.0386 ± 0.1116 ± 0.0420	0.0386 ± 0.1116 ± 0.0420
		0.57 – 2.00	5.60	0.237	0.467	0.476	0.756	0.805	-0.0260 ± 0.1589 ± 0.0396	-0.0260 ± 0.1589 ± 0.0396
	0.52 – 0.70	0.00 – 0.24	4.95	0.223	0.426	0.593	0.156	0.844	-0.1819 ± 0.0785 ± 0.0100	-0.1819 ± 0.0785 ± 0.0100
		0.24 – 0.40	4.89	0.229	0.411	0.594	0.319	0.855	-0.0335 ± 0.0804 ± 0.0000	-0.0335 ± 0.0804 ± 0.0000
		0.40 – 0.57	4.88	0.231	0.411	0.599	0.479	0.853	-0.1572 ± 0.0950 ± 0.0129	-0.1572 ± 0.0950 ± 0.0129
		0.57 – 2.00	5.07	0.233	0.427	0.604	0.749	0.837	-0.1044 ± 0.1216 ± 0.0289	-0.1044 ± 0.1216 ± 0.0289

Table 13. Three-dimensionally binned SFA and CSA amplitudes of the $\sin(\phi+\phi_S)$ modulation for p as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

5.2 Sivers asymmetry

Kinematic bin		Average kinematics						π^+	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(\phi - \phi_S) \rangle_{U\perp}$	$2\langle \sin(\phi - \phi_S) \rangle_{U\perp}$
x	0.023 – 0.046	1.29	0.036	0.702	0.336	0.486	0.526	0.0311 ± 0.0087 ± 0.0019	0.0289 ± 0.0085 ± 0.0021
	0.046 – 0.067	1.64	0.056	0.567	0.356	0.408	0.700	0.0271 ± 0.0074 ± 0.0018	0.0285 ± 0.0072 ± 0.0017
	0.067 – 0.082	1.98	0.074	0.516	0.366	0.375	0.752	0.0557 ± 0.0088 ± 0.0004	0.0571 ± 0.0087 ± 0.0012
	0.082 – 0.105	2.34	0.093	0.489	0.374	0.358	0.778	0.0472 ± 0.0075 ± 0.0014	0.0470 ± 0.0074 ± 0.0023
	0.082 – 0.105	2.34	0.093	0.489	0.374	0.358	0.778	0.0472 ± 0.0075 ± 0.0014	0.0470 ± 0.0074 ± 0.0023
	0.105 – 0.134	2.87	0.118	0.469	0.379	0.348	0.796	0.0388 ± 0.0076 ± 0.0002	0.0383 ± 0.0075 ± 0.0012
	0.134 – 0.186	3.69	0.157	0.456	0.379	0.342	0.811	0.0394 ± 0.0074 ± 0.0011	0.0400 ± 0.0074 ± 0.0019
	0.186 – 0.600	5.71	0.254	0.437	0.375	0.343	0.832	0.0565 ± 0.0087 ± 0.0041	0.0571 ± 0.0085 ± 0.0039
z	0.200 – 0.260	2.44	0.087	0.594	0.229	0.344	0.661	0.0252 ± 0.0054 ± 0.0014	0.0257 ± 0.0054 ± 0.0010
	0.260 – 0.320	2.46	0.094	0.556	0.289	0.371	0.702	0.0323 ± 0.0059 ± 0.0019	0.0334 ± 0.0059 ± 0.0012
	0.320 – 0.380	2.45	0.098	0.533	0.349	0.394	0.725	0.0447 ± 0.0067 ± 0.0040	0.0454 ± 0.0067 ± 0.0030
	0.380 – 0.450	2.45	0.100	0.520	0.413	0.418	0.740	0.0328 ± 0.0073 ± 0.0040	0.0355 ± 0.0073 ± 0.0036
	0.450 – 0.520	2.44	0.101	0.508	0.483	0.441	0.753	0.0481 ± 0.0086 ± 0.0075	0.0444 ± 0.0087 ± 0.0076
	0.450 – 0.520	2.44	0.101	0.508	0.483	0.441	0.753	0.0481 ± 0.0086 ± 0.0075	0.0444 ± 0.0087 ± 0.0076
	0.520 – 0.600	2.43	0.102	0.499	0.558	0.460	0.763	0.0708 ± 0.0096 ± 0.0072	0.0699 ± 0.0097 ± 0.0077
	0.600 – 0.700	2.41	0.104	0.481	0.647	0.466	0.785	0.0699 ± 0.0104 ± 0.0098	0.0691 ± 0.0105 ± 0.0113
	0.700 – 0.760	2.41	0.107	0.457	0.729	0.453	0.813	0.1018 ± 0.0159 ± 0.0121	0.1010 ± 0.0160 ± 0.0140
	0.760 – 0.840	2.35	0.108	0.434	0.798	0.433	0.837	0.0721 ± 0.0161 ± 0.0145	0.0707 ± 0.0162 ± 0.0164
	0.840 – 1.200	2.31	0.116	0.394	0.916	0.376	0.872	0.0007 ± 0.0147 ± 0.0145	-0.0025 ± 0.0147 ± 0.0164
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.56	0.110	0.460	0.341	0.110	0.813	0.0001 ± 0.0068 ± 0.0005	0.0001 ± 0.0069 ± 0.0004
	0.170 – 0.250	2.56	0.108	0.489	0.350	0.211	0.779	0.0190 ± 0.0072 ± 0.0017	0.0189 ± 0.0073 ± 0.0013
	0.250 – 0.310	2.52	0.103	0.514	0.354	0.280	0.750	0.0310 ± 0.0082 ± 0.0003	0.0338 ± 0.0083 ± 0.0011
	0.310 – 0.380	2.46	0.097	0.540	0.355	0.345	0.721	0.0424 ± 0.0077 ± 0.0025	0.0434 ± 0.0077 ± 0.0052
	0.310 – 0.380	2.46	0.097	0.540	0.355	0.345	0.721	0.0424 ± 0.0077 ± 0.0025	0.0434 ± 0.0077 ± 0.0052
	0.380 – 0.520	2.39	0.090	0.570	0.356	0.446	0.686	0.0594 ± 0.0059 ± 0.0047	0.0620 ± 0.0059 ± 0.0077
	0.520 – 0.690	2.34	0.084	0.601	0.373	0.594	0.648	0.0576 ± 0.0069 ± 0.0080	0.0590 ± 0.0069 ± 0.0108
	0.690 – 2.000	2.30	0.076	0.642	0.429	0.849	0.597	0.0663 ± 0.0085 ± 0.0056	0.0680 ± 0.0084 ± 0.0069

Table 14. One-dimensionally binned SFA and CSA amplitudes of the $\sin(\phi - \phi_S)$ modulation for π^+ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin		Average kinematics						π^0	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(\phi - \phi_S) \rangle_{U\perp}$	$2\langle \sin(\phi - \phi_S) \rangle_{U\perp}$
x	0.023 – 0.046	1.30	0.036	0.712	0.325	0.492	0.512	-0.0195 ± 0.0297 ± 0.0193	-0.0132 ± 0.0305 ± 0.0195
	0.046 – 0.067	1.72	0.056	0.597	0.352	0.406	0.665	-0.0261 ± 0.0253 ± 0.0193	-0.0145 ± 0.0253 ± 0.0195
	0.067 – 0.082	2.14	0.074	0.558	0.366	0.374	0.708	0.0556 ± 0.0295 ± 0.0197	0.0556 ± 0.0291 ± 0.0197
	0.082 – 0.105	2.58	0.093	0.538	0.372	0.353	0.731	0.0273 ± 0.0243 ± 0.0193	0.0339 ± 0.0240 ± 0.0192
	0.082 – 0.105	2.58	0.093	0.538	0.372	0.353	0.731	0.0273 ± 0.0243 ± 0.0193	0.0339 ± 0.0240 ± 0.0192
	0.105 – 0.134	3.19	0.118	0.522	0.378	0.338	0.749	0.0139 ± 0.0244 ± 0.0192	0.0196 ± 0.0244 ± 0.0193
	0.134 – 0.186	4.10	0.156	0.507	0.380	0.323	0.766	0.0293 ± 0.0226 ± 0.0192	0.0312 ± 0.0227 ± 0.0192
	0.186 – 0.600	6.14	0.249	0.479	0.386	0.326	0.797	0.0450 ± 0.0270 ± 0.0199	0.0437 ± 0.0266 ± 0.0198
z	0.200 – 0.260	2.45	0.078	0.648	0.229	0.337	0.598	0.0056 ± 0.0257 ± 0.0229	0.0165 ± 0.0262 ± 0.0222
	0.260 – 0.320	2.49	0.085	0.609	0.289	0.372	0.645	-0.0264 ± 0.0215 ± 0.0232	-0.0243 ± 0.0217 ± 0.0226
	0.320 – 0.380	2.52	0.090	0.581	0.348	0.401	0.679	0.0097 ± 0.0215 ± 0.0228	0.0148 ± 0.0217 ± 0.0221
	0.380 – 0.450	2.53	0.095	0.558	0.413	0.427	0.705	0.0488 ± 0.0201 ± 0.0231	0.0536 ± 0.0203 ± 0.0225
	0.450 – 0.520	2.55	0.099	0.537	0.483	0.450	0.728	0.0447 ± 0.0208 ± 0.0241	0.0452 ± 0.0210 ± 0.0236
	0.450 – 0.520	2.55	0.099	0.537	0.483	0.450	0.728	0.0447 ± 0.0208 ± 0.0241	0.0452 ± 0.0210 ± 0.0236
	0.520 – 0.600	2.57	0.102	0.517	0.557	0.469	0.750	0.0248 ± 0.0217 ± 0.0242	0.0225 ± 0.0220 ± 0.0240
	0.600 – 0.700	2.59	0.106	0.496	0.645	0.483	0.774	0.0679 ± 0.0222 ± 0.0238	0.0738 ± 0.0225 ± 0.0234
	0.700 – 0.760	2.61	0.112	0.472	0.728	0.494	0.799	0.0383 ± 0.0352 ± 0.0253	0.0384 ± 0.0353 ± 0.0254
	0.760 – 0.840	2.66	0.116	0.457	0.796	0.488	0.815	0.1344 ± 0.0378 ± 0.0228	0.1329 ± 0.0378 ± 0.0223
	0.840 – 1.200	2.56	0.121	0.418	0.908	0.478	0.849	0.0655 ± 0.0441 ± 0.0230	0.0734 ± 0.0437 ± 0.0225
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.82	0.114	0.481	0.338	0.111	0.799	-0.0120 ± 0.0263 ± 0.0198	-0.0108 ± 0.0265 ± 0.0185
	0.170 – 0.250	2.69	0.103	0.529	0.340	0.211	0.745	0.0470 ± 0.0262 ± 0.0198	0.0483 ± 0.0267 ± 0.0184
	0.250 – 0.310	2.59	0.095	0.563	0.343	0.280	0.705	0.0555 ± 0.0277 ± 0.0198	0.0635 ± 0.0283 ± 0.0184
	0.310 – 0.380	2.49	0.088	0.591	0.347	0.345	0.668	0.0169 ± 0.0266 ± 0.0199	0.0237 ± 0.0273 ± 0.0188
	0.310 – 0.380	2.49	0.088	0.591	0.347	0.345	0.668	0.0169 ± 0.0266 ± 0.0199	0.0237 ± 0.0273 ± 0.0188
	0.380 – 0.520	2.39	0.081	0.624	0.353	0.446	0.625	0.0166 ± 0.0187 ± 0.0205	0.0332 ± 0.0190 ± 0.0201
	0.520 – 0.690	2.30	0.074	0.652	0.371	0.595	0.587	0.0129 ± 0.0191 ± 0.0202	0.0101 ± 0.0195 ± 0.0196
	0.690 – 2.000	2.27	0.071	0.675	0.428	0.849	0.554	0.0286 ± 0.0194 ± 0.0197	0.0322 ± 0.0197 ± 0.0184

Table 15. One-dimensionally binned SFA and CSA amplitudes of the $\sin(\phi - \phi_S)$ modulation for π^0 as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin		Average kinematics						π^-	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(\phi - \phi_S) \rangle_{U\perp}$	$2\langle \sin(\phi - \phi_S) \rangle_{U\perp}$
x	0.023 – 0.046	1.29	0.036	0.704	0.330	0.481	0.524	0.0137 ± 0.0095 ± 0.0016	0.0123 ± 0.0093 ± 0.0009
	0.046 – 0.067	1.64	0.056	0.568	0.350	0.402	0.699	0.0152 ± 0.0083 ± 0.0008	0.0139 ± 0.0081 ± 0.0002
	0.067 – 0.082	1.98	0.074	0.515	0.359	0.369	0.752	-0.0027 ± 0.0100 ± 0.0002	-0.0024 ± 0.0099 ± 0.0004
	0.082 – 0.105	2.33	0.093	0.487	0.366	0.354	0.779	-0.0081 ± 0.0088 ± 0.0010	-0.0077 ± 0.0087 ± 0.0008
	0.082 – 0.105	2.33	0.093	0.487	0.366	0.354	0.779	-0.0081 ± 0.0088 ± 0.0010	-0.0077 ± 0.0087 ± 0.0008
	0.105 – 0.134	2.86	0.118	0.468	0.369	0.348	0.797	-0.0087 ± 0.0091 ± 0.0001	-0.0063 ± 0.0090 ± 0.0007
	0.134 – 0.186	3.66	0.156	0.454	0.369	0.342	0.813	0.0181 ± 0.0092 ± 0.0000	0.0197 ± 0.0091 ± 0.0011
	0.186 – 0.600	5.66	0.253	0.434	0.364	0.349	0.835	-0.0066 ± 0.0112 ± 0.0006	-0.0057 ± 0.0109 ± 0.0020
z	0.200 – 0.260	2.39	0.084	0.598	0.229	0.350	0.656	0.0091 ± 0.0061 ± 0.0030	0.0099 ± 0.0061 ± 0.0025
	0.260 – 0.320	2.38	0.091	0.559	0.289	0.379	0.698	0.0150 ± 0.0068 ± 0.0053	0.0133 ± 0.0068 ± 0.0049
	0.320 – 0.380	2.36	0.094	0.536	0.348	0.403	0.721	0.0145 ± 0.0080 ± 0.0047	0.0125 ± 0.0079 ± 0.0045
	0.380 – 0.450	2.37	0.097	0.521	0.413	0.422	0.738	0.0075 ± 0.0088 ± 0.0073	0.0100 ± 0.0088 ± 0.0078
	0.450 – 0.520	2.35	0.098	0.509	0.483	0.437	0.751	0.0033 ± 0.0105 ± 0.0083	0.0028 ± 0.0106 ± 0.0092
	0.450 – 0.520	2.35	0.098	0.509	0.483	0.437	0.751	0.0033 ± 0.0105 ± 0.0083	0.0028 ± 0.0106 ± 0.0092
	0.520 – 0.600	2.31	0.098	0.498	0.558	0.449	0.764	-0.0115 ± 0.0119 ± 0.0091	-0.0095 ± 0.0120 ± 0.0112
	0.600 – 0.700	2.27	0.099	0.479	0.646	0.438	0.787	0.0091 ± 0.0132 ± 0.0115	0.0112 ± 0.0134 ± 0.0142
	0.700 – 0.760	2.19	0.099	0.452	0.729	0.416	0.818	-0.0299 ± 0.0206 ± 0.0078	-0.0286 ± 0.0208 ± 0.0103
	0.760 – 0.840	2.15	0.101	0.432	0.798	0.389	0.839	-0.0433 ± 0.0205 ± 0.0161	-0.0424 ± 0.0205 ± 0.0188
	0.840 – 1.200	2.08	0.104	0.399	0.906	0.338	0.868	-0.0403 ± 0.0199 ± 0.0199	-0.0395 ± 0.0199 ± 0.0218
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.48	0.107	0.462	0.337	0.110	0.811	0.0070 ± 0.0081 ± 0.0018	0.0085 ± 0.0081 ± 0.0028
	0.170 – 0.250	2.47	0.103	0.492	0.345	0.211	0.775	0.0142 ± 0.0086 ± 0.0017	0.0157 ± 0.0087 ± 0.0033
	0.250 – 0.310	2.43	0.098	0.520	0.350	0.280	0.743	0.0092 ± 0.0097 ± 0.0033	0.0103 ± 0.0098 ± 0.0044
	0.310 – 0.380	2.36	0.092	0.546	0.349	0.345	0.714	0.0021 ± 0.0091 ± 0.0034	0.0014 ± 0.0091 ± 0.0031
	0.310 – 0.380	2.36	0.092	0.546	0.349	0.345	0.714	0.0021 ± 0.0091 ± 0.0034	0.0014 ± 0.0091 ± 0.0031
	0.380 – 0.520	2.30	0.086	0.576	0.347	0.446	0.678	0.0015 ± 0.0070 ± 0.0001	-0.0010 ± 0.0069 ± 0.0007
	0.520 – 0.690	2.28	0.081	0.606	0.359	0.594	0.640	0.0076 ± 0.0081 ± 0.0035	0.0060 ± 0.0080 ± 0.0046
	0.690 – 2.000	2.26	0.076	0.643	0.409	0.846	0.594	0.0203 ± 0.0101 ± 0.0037	0.0192 ± 0.0100 ± 0.0044

Table 16. One-dimensionally binned SFA and CSA amplitudes of the $\sin(\phi - \phi_S)$ modulation for π^- as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin		Average kinematics						K^+	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(\phi - \phi_S) \rangle_{U\perp}$	$2\langle \sin(\phi - \phi_S) \rangle_{U\perp}$
x	0.023 – 0.046	1.29	0.036	0.704	0.363	0.527	0.524	0.0441 ± 0.0237 ± 0.0188	0.0527 ± 0.0233 ± 0.0161
	0.046 – 0.067	1.65	0.056	0.571	0.384	0.436	0.696	0.0636 ± 0.0198 ± 0.0169	0.0602 ± 0.0193 ± 0.0158
	0.067 – 0.082	2.01	0.074	0.524	0.392	0.398	0.743	0.0802 ± 0.0235 ± 0.0172	0.0801 ± 0.0233 ± 0.0156
	0.082 – 0.105	2.39	0.093	0.498	0.401	0.378	0.769	0.0713 ± 0.0199 ± 0.0122	0.0715 ± 0.0199 ± 0.0097
	0.082 – 0.105	2.39	0.093	0.498	0.401	0.378	0.769	0.0713 ± 0.0199 ± 0.0122	0.0715 ± 0.0199 ± 0.0097
	0.105 – 0.134	2.93	0.118	0.479	0.404	0.366	0.788	0.0871 ± 0.0198 ± 0.0099	0.0884 ± 0.0199 ± 0.0084
	0.134 – 0.186	3.79	0.157	0.468	0.408	0.358	0.801	0.0762 ± 0.0186 ± 0.0066	0.0773 ± 0.0186 ± 0.0064
	0.186 – 0.600	5.86	0.252	0.451	0.410	0.357	0.822	0.0739 ± 0.0202 ± 0.0069	0.0739 ± 0.0200 ± 0.0066
z	0.200 – 0.260	2.46	0.085	0.603	0.228	0.351	0.652	0.0349 ± 0.0170 ± 0.0005	0.0346 ± 0.0171 ± 0.0006
	0.260 – 0.320	2.49	0.092	0.569	0.287	0.378	0.688	0.0233 ± 0.0168 ± 0.0048	0.0261 ± 0.0170 ± 0.0047
	0.320 – 0.380	2.53	0.097	0.548	0.347	0.403	0.711	0.0580 ± 0.0172 ± 0.0107	0.0556 ± 0.0173 ± 0.0107
	0.380 – 0.450	2.56	0.101	0.532	0.412	0.425	0.730	0.0966 ± 0.0174 ± 0.0106	0.0929 ± 0.0176 ± 0.0103
	0.450 – 0.520	2.55	0.102	0.522	0.482	0.458	0.739	0.1074 ± 0.0198 ± 0.0037	0.1104 ± 0.0199 ± 0.0028
	0.450 – 0.520	2.55	0.102	0.522	0.482	0.458	0.739	0.1074 ± 0.0198 ± 0.0037	0.1104 ± 0.0199 ± 0.0028
	0.520 – 0.600	2.54	0.104	0.515	0.556	0.484	0.748	0.1147 ± 0.0212 ± 0.0010	0.1103 ± 0.0214 ± 0.0008
	0.600 – 0.700	2.61	0.108	0.500	0.645	0.506	0.766	0.0912 ± 0.0230 ± 0.0066	0.0944 ± 0.0232 ± 0.0039
	0.700 – 0.760	2.63	0.112	0.474	0.727	0.506	0.797	0.1272 ± 0.0352 ± 0.0013	0.1290 ± 0.0356 ± 0.0015
	0.760 – 0.840	2.62	0.116	0.448	0.796	0.501	0.825	0.1981 ± 0.0349 ± 0.0079	0.1942 ± 0.0351 ± 0.0108
	0.840 – 1.200	2.47	0.119	0.411	0.903	0.469	0.858	0.1929 ± 0.0379 ± 0.0134	0.1859 ± 0.0379 ± 0.0170
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.68	0.113	0.468	0.362	0.111	0.807	0.0282 ± 0.0177 ± 0.0162	0.0280 ± 0.0178 ± 0.0167
	0.170 – 0.250	2.66	0.109	0.495	0.372	0.211	0.775	0.0641 ± 0.0192 ± 0.0171	0.0649 ± 0.0195 ± 0.0177
	0.250 – 0.310	2.66	0.106	0.517	0.377	0.280	0.750	0.0725 ± 0.0224 ± 0.0119	0.0671 ± 0.0228 ± 0.0111
	0.310 – 0.380	2.56	0.099	0.540	0.381	0.345	0.723	0.0774 ± 0.0213 ± 0.0034	0.0807 ± 0.0217 ± 0.0003
	0.310 – 0.380	2.56	0.099	0.540	0.381	0.345	0.723	0.0774 ± 0.0213 ± 0.0034	0.0807 ± 0.0217 ± 0.0003
	0.380 – 0.520	2.49	0.093	0.565	0.387	0.447	0.692	0.0884 ± 0.0158 ± 0.0001	0.0908 ± 0.0159 ± 0.0044
	0.520 – 0.690	2.41	0.087	0.593	0.402	0.597	0.658	0.0840 ± 0.0179 ± 0.0092	0.0857 ± 0.0179 ± 0.0143
	0.690 – 2.000	2.29	0.076	0.642	0.451	0.867	0.597	0.0682 ± 0.0190 ± 0.0016	0.0734 ± 0.0190 ± 0.0031

Table 17. One-dimensionally binned SFA and CSA amplitudes of the $\sin(\phi - \phi_S)$ modulation for K^+ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin		Average kinematics						K^-	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(\phi - \phi_S) \rangle_{U\perp}$	$2\langle \sin(\phi - \phi_S) \rangle_{U\perp}$
x	0.023 – 0.046	1.30	0.036	0.711	0.338	0.503	0.513	-0.0003 ± 0.0297 ± 0.0001	-0.0043 ± 0.0291 ± 0.0006
	0.046 – 0.067	1.67	0.056	0.578	0.355	0.417	0.687	0.0536 ± 0.0277 ± 0.0057	0.0493 ± 0.0270 ± 0.0038
	0.067 – 0.082	2.04	0.074	0.533	0.361	0.381	0.734	0.0571 ± 0.0341 ± 0.0100	0.0565 ± 0.0339 ± 0.0079
	0.082 – 0.105	2.44	0.093	0.510	0.367	0.367	0.758	0.0155 ± 0.0297 ± 0.0083	0.0216 ± 0.0294 ± 0.0071
	0.082 – 0.105	2.44	0.093	0.510	0.367	0.367	0.758	0.0155 ± 0.0297 ± 0.0083	0.0216 ± 0.0294 ± 0.0071
	0.105 – 0.134	3.01	0.118	0.493	0.366	0.362	0.775	0.0350 ± 0.0322 ± 0.0100	0.0357 ± 0.0321 ± 0.0081
	0.134 – 0.186	3.89	0.157	0.480	0.365	0.356	0.790	0.0392 ± 0.0314 ± 0.0161	0.0381 ± 0.0312 ± 0.0148
	0.186 – 0.600	5.82	0.251	0.451	0.363	0.364	0.821	0.0186 ± 0.0378 ± 0.0328	0.0191 ± 0.0372 ± 0.0319
z	0.200 – 0.260	2.41	0.082	0.616	0.227	0.362	0.636	0.0046 ± 0.0220 ± 0.0066	0.0007 ± 0.0218 ± 0.0063
	0.260 – 0.320	2.41	0.087	0.582	0.287	0.389	0.673	0.0376 ± 0.0233 ± 0.0058	0.0357 ± 0.0233 ± 0.0046
	0.320 – 0.380	2.40	0.091	0.557	0.347	0.419	0.701	-0.0120 ± 0.0259 ± 0.0049	-0.0098 ± 0.0259 ± 0.0031
	0.380 – 0.450	2.37	0.092	0.542	0.411	0.440	0.718	0.0708 ± 0.0283 ± 0.0050	0.0646 ± 0.0285 ± 0.0022
	0.450 – 0.520	2.29	0.091	0.534	0.482	0.460	0.726	0.0525 ± 0.0332 ± 0.0004	0.0565 ± 0.0335 ± 0.0025
	0.450 – 0.520	2.29	0.091	0.534	0.482	0.460	0.726	0.0525 ± 0.0332 ± 0.0004	0.0565 ± 0.0335 ± 0.0025
	0.520 – 0.600	2.34	0.093	0.531	0.556	0.465	0.729	0.0547 ± 0.0407 ± 0.0091	0.0630 ± 0.0411 ± 0.0136
	0.600 – 0.700	2.33	0.094	0.520	0.642	0.493	0.744	0.0437 ± 0.0497 ± 0.0124	0.0423 ± 0.0504 ± 0.0173
	0.700 – 0.760	2.28	0.093	0.506	0.726	0.500	0.766	0.1774 ± 0.0882 ± 0.0091	0.2062 ± 0.0882 ± 0.0140
	0.760 – 0.840	2.30	0.096	0.482	0.793	0.464	0.795	0.1099 ± 0.1285 ± 0.0199	0.1303 ± 0.1367 ± 0.0240
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.47	0.103	0.477	0.337	0.111	0.797	-0.0038 ± 0.0281 ± 0.0203	-0.0011 ± 0.0284 ± 0.0190
	0.170 – 0.250	2.48	0.100	0.513	0.346	0.210	0.756	0.0942 ± 0.0305 ± 0.0184	0.0928 ± 0.0312 ± 0.0147
	0.250 – 0.310	2.48	0.096	0.540	0.346	0.280	0.724	0.0086 ± 0.0352 ± 0.0140	0.0050 ± 0.0360 ± 0.0100
	0.310 – 0.380	2.39	0.089	0.566	0.351	0.345	0.692	0.0164 ± 0.0330 ± 0.0105	0.0253 ± 0.0334 ± 0.0060
	0.310 – 0.380	2.39	0.089	0.566	0.351	0.345	0.692	0.0164 ± 0.0330 ± 0.0105	0.0253 ± 0.0334 ± 0.0060
	0.380 – 0.520	2.32	0.084	0.592	0.348	0.447	0.661	0.0261 ± 0.0242 ± 0.0076	0.0269 ± 0.0242 ± 0.0026
	0.520 – 0.690	2.31	0.080	0.620	0.358	0.597	0.625	0.0183 ± 0.0268 ± 0.0135	0.0193 ± 0.0265 ± 0.0085
	0.690 – 2.000	2.26	0.073	0.661	0.409	0.856	0.572	0.0524 ± 0.0290 ± 0.0153	0.0501 ± 0.0288 ± 0.0119

Table 18. One-dimensionally binned SFA and CSA amplitudes of the $\sin(\phi - \phi_S)$ modulation for K^- as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin		Average kinematics						p	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(\phi - \phi_S) \rangle_{U\perp}$	$2\langle \sin(\phi - \phi_S) \rangle_{U\perp}$
x	0.023 – 0.040	1.24	0.033	0.738	0.354	0.550	0.475	0.0387 ± 0.0306 ± 0.0181	0.0220 ± 0.0303 ± 0.0173
	0.040 – 0.057	1.54	0.048	0.619	0.395	0.490	0.640	0.0294 ± 0.0254 ± 0.0142	0.0341 ± 0.0248 ± 0.0135
	0.057 – 0.075	1.90	0.066	0.561	0.424	0.447	0.706	0.0326 ± 0.0245 ± 0.0195	0.0365 ± 0.0239 ± 0.0169
	0.075 – 0.098	2.36	0.086	0.533	0.439	0.430	0.735	0.0585 ± 0.0231 ± 0.0190	0.0593 ± 0.0229 ± 0.0187
	0.075 – 0.098	2.36	0.086	0.533	0.439	0.430	0.735	0.0585 ± 0.0231 ± 0.0190	0.0593 ± 0.0229 ± 0.0187
	0.098 – 0.136	3.06	0.115	0.514	0.449	0.406	0.757	0.0242 ± 0.0199 ± 0.0190	0.0222 ± 0.0199 ± 0.0190
	0.136 – 0.185	4.04	0.158	0.496	0.457	0.390	0.777	0.0400 ± 0.0221 ± 0.0143	0.0399 ± 0.0221 ± 0.0144
	0.185 – 0.600	6.13	0.257	0.464	0.471	0.383	0.811	0.0394 ± 0.0220 ± 0.0186	0.0403 ± 0.0218 ± 0.0189
z	0.200 – 0.270	2.30	0.062	0.739	0.239	0.477	0.477	0.0527 ± 0.0258 ± 0.0114	0.0520 ± 0.0257 ± 0.0113
	0.270 – 0.340	2.57	0.081	0.643	0.306	0.456	0.613	0.0337 ± 0.0203 ± 0.0168	0.0275 ± 0.0204 ± 0.0157
	0.340 – 0.410	2.64	0.093	0.583	0.375	0.443	0.683	0.0590 ± 0.0184 ± 0.0155	0.0604 ± 0.0186 ± 0.0155
	0.410 – 0.470	2.66	0.102	0.544	0.439	0.446	0.723	0.0140 ± 0.0201 ± 0.0057	0.0118 ± 0.0203 ± 0.0059
	0.470 – 0.530	2.68	0.109	0.512	0.499	0.435	0.757	0.0307 ± 0.0219 ± 0.0055	0.0283 ± 0.0219 ± 0.0048
	0.470 – 0.530	2.68	0.109	0.512	0.499	0.435	0.757	0.0307 ± 0.0219 ± 0.0055	0.0283 ± 0.0219 ± 0.0048
	0.530 – 0.610	2.64	0.113	0.485	0.567	0.452	0.781	0.0152 ± 0.0219 ± 0.0088	0.0157 ± 0.0219 ± 0.0091
	0.610 – 0.700	2.63	0.119	0.455	0.650	0.463	0.810	0.0584 ± 0.0271 ± 0.0113	0.0595 ± 0.0270 ± 0.0112
	0.700 – 0.780	2.57	0.123	0.423	0.735	0.477	0.841	0.0508 ± 0.0416 ± 0.0179	0.0529 ± 0.0415 ± 0.0174
	0.780 – 0.880	2.54	0.130	0.389	0.821	0.490	0.872	0.0573 ± 0.0583 ± 0.0203	0.0579 ± 0.0579 ± 0.0195
	0.880 – 1.200	2.45	0.136	0.353	0.938	0.505	0.900	-0.0824 ± 0.0993 ± 0.0517	-0.0840 ± 0.0981 ± 0.0521
$P_{h\perp}$ [GeV]	0.000 – 0.230	2.88	0.113	0.510	0.435	0.150	0.765	0.0336 ± 0.0180 ± 0.0168	0.0339 ± 0.0182 ± 0.0170
	0.230 – 0.340	2.76	0.106	0.543	0.427	0.286	0.723	0.0221 ± 0.0192 ± 0.0219	0.0259 ± 0.0196 ± 0.0225
	0.340 – 0.430	2.62	0.097	0.569	0.416	0.385	0.691	0.0336 ± 0.0222 ± 0.0131	0.0293 ± 0.0226 ± 0.0142
	0.430 – 0.520	2.54	0.091	0.590	0.413	0.474	0.666	0.0550 ± 0.0235 ± 0.0186	0.0532 ± 0.0235 ± 0.0189
	0.430 – 0.520	2.54	0.091	0.590	0.413	0.474	0.666	0.0550 ± 0.0235 ± 0.0186	0.0532 ± 0.0235 ± 0.0189
	0.520 – 0.620	2.44	0.085	0.608	0.406	0.568	0.644	0.0297 ± 0.0236 ± 0.0109	0.0288 ± 0.0237 ± 0.0121
	0.620 – 0.740	2.35	0.080	0.620	0.405	0.676	0.628	0.0700 ± 0.0253 ± 0.0180	0.0696 ± 0.0253 ± 0.0197
	0.740 – 2.000	2.31	0.078	0.633	0.432	0.904	0.609	0.0457 ± 0.0228 ± 0.0082	0.0438 ± 0.0224 ± 0.0082

Table 19. One-dimensionally binned SFA and CSA amplitudes of the $\sin(\phi - \phi_S)$ modulation for p as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin		Average kinematics						$\bar{p}$	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(\phi - \phi_S) \rangle_{U\perp}$	$2\langle \sin(\phi - \phi_S) \rangle_{U\perp}$
x	0.023 – 0.040	1.26	0.032	0.759	0.335	0.539	0.442	0.1227 ± 0.0594 ± 0.0190	0.1042 ± 0.0580 ± 0.0219
	0.040 – 0.057	1.65	0.048	0.666	0.360	0.492	0.579	0.1336 ± 0.0611 ± 0.0287	0.1486 ± 0.0584 ± 0.0327
	0.057 – 0.075	2.12	0.065	0.628	0.372	0.472	0.626	0.0735 ± 0.0617 ± 0.0104	0.0871 ± 0.0585 ± 0.0081
	0.075 – 0.098	2.69	0.085	0.608	0.377	0.450	0.655	0.0935 ± 0.0650 ± 0.0052	0.0917 ± 0.0640 ± 0.0017
	0.075 – 0.098	2.69	0.085	0.608	0.377	0.450	0.655	0.0935 ± 0.0650 ± 0.0052	0.0917 ± 0.0640 ± 0.0017
	0.098 – 0.136	3.48	0.115	0.588	0.385	0.429	0.678	0.0087 ± 0.0642 ± 0.0055	0.0185 ± 0.0637 ± 0.0120
	0.136 – 0.185	4.58	0.158	0.562	0.385	0.399	0.712	0.0116 ± 0.0771 ± 0.0116	0.0166 ± 0.0771 ± 0.0173
	0.185 – 0.600	6.60	0.243	0.531	0.406	0.383	0.748	0.0924 ± 0.0790 ± 0.0240	0.0944 ± 0.0793 ± 0.0200
z	0.200 – 0.270	2.25	0.060	0.750	0.238	0.471	0.459	0.1433 ± 0.0493 ± 0.0167	0.1428 ± 0.0488 ± 0.0165
	0.270 – 0.340	2.48	0.074	0.679	0.304	0.476	0.562	0.0257 ± 0.0464 ± 0.0235	0.0298 ± 0.0458 ± 0.0211
	0.340 – 0.410	2.43	0.079	0.634	0.373	0.482	0.618	0.0714 ± 0.0528 ± 0.0207	0.0668 ± 0.0523 ± 0.0124
	0.410 – 0.470	2.43	0.085	0.595	0.437	0.470	0.665	0.1126 ± 0.0710 ± 0.0167	0.1384 ± 0.0707 ± 0.0084
	0.470 – 0.530	2.41	0.085	0.583	0.498	0.478	0.678	-0.0040 ± 0.0876 ± 0.0292	0.0143 ± 0.0870 ± 0.0190
	0.470 – 0.530	2.41	0.085	0.583	0.498	0.478	0.678	-0.0040 ± 0.0876 ± 0.0292	0.0143 ± 0.0870 ± 0.0190
	0.530 – 0.610	2.26	0.083	0.567	0.563	0.492	0.698	0.0590 ± 0.0973 ± 0.0049	0.0730 ± 0.0993 ± 0.0047
	0.610 – 0.700	2.40	0.095	0.527	0.645	0.502	0.745	0.0957 ± 0.1401 ± 0.0219	0.0704 ± 0.1413 ± 0.0127
$P_{h\perp}$ [GeV]	0.000 – 0.230	2.79	0.097	0.586	0.378	0.151	0.683	0.0226 ± 0.0599 ± 0.0159	0.0362 ± 0.0616 ± 0.0079
	0.230 – 0.340	2.53	0.083	0.630	0.364	0.288	0.622	0.1567 ± 0.0640 ± 0.0132	0.1512 ± 0.0698 ± 0.0028
	0.340 – 0.430	2.37	0.075	0.652	0.358	0.385	0.592	-0.0562 ± 0.0792 ± 0.0061	-0.0278 ± 0.0774 ± 0.0175
	0.430 – 0.520	2.35	0.073	0.667	0.351	0.475	0.572	0.2936 ± 0.0692 ± 0.0048	0.2942 ± 0.0677 ± 0.0023
	0.430 – 0.520	2.35	0.073	0.667	0.351	0.475	0.572	0.2936 ± 0.0692 ± 0.0048	0.2942 ± 0.0677 ± 0.0023
	0.520 – 0.620	2.30	0.070	0.678	0.355	0.569	0.557	0.0393 ± 0.0669 ± 0.0266	0.0353 ± 0.0663 ± 0.0216
	0.620 – 0.740	2.21	0.066	0.687	0.355	0.675	0.544	0.1256 ± 0.0612 ± 0.0093	0.1321 ± 0.0597 ± 0.0044
	0.740 – 2.000	2.12	0.062	0.698	0.386	0.886	0.527	-0.0031 ± 0.0580 ± 0.0205	0.0090 ± 0.0560 ± 0.0154

Table 20. One-dimensionally binned SFA and CSA amplitudes of the $\sin(\phi - \phi_S)$ modulation for $\bar{p}$ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin			Average kinematics						π^+	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(\phi - \phi_S) \rangle_{U\perp}$	$2\langle \sin(\phi - \phi_S) \rangle_{U\perp}$
0.023 – 0.072	0.20 – 0.28	0.00 – 0.23	1.46	0.052	0.561	0.236	0.151	0.708	0.0196 ± 0.0255 ± 0.0057	0.0196 ± 0.0255 ± 0.0057
		0.23 – 0.36	1.51	0.048	0.632	0.235	0.298	0.619	0.0286 ± 0.0210 ± 0.0021	0.0286 ± 0.0210 ± 0.0021
		0.36 – 0.54	1.54	0.046	0.673	0.237	0.443	0.564	0.0369 ± 0.0129 ± 0.0049	0.0369 ± 0.0129 ± 0.0049
		0.54 – 2.00	1.59	0.043	0.730	0.242	0.655	0.483	0.0221 ± 0.0162 ± 0.0048	0.0221 ± 0.0162 ± 0.0048
	0.28 – 0.37	0.00 – 0.23	1.43	0.054	0.525	0.320	0.150	0.750	0.0270 ± 0.0296 ± 0.0009	0.0270 ± 0.0296 ± 0.0009
		0.23 – 0.36	1.48	0.050	0.595	0.320	0.297	0.665	0.0126 ± 0.0387 ± 0.0052	0.0126 ± 0.0387 ± 0.0052
		0.36 – 0.54	1.52	0.047	0.640	0.320	0.449	0.607	0.0296 ± 0.0209 ± 0.0036	0.0296 ± 0.0209 ± 0.0036
		0.54 – 2.00	1.56	0.045	0.692	0.323	0.699	0.536	0.0266 ± 0.0156 ± 0.0060	0.0266 ± 0.0156 ± 0.0060
	0.37 – 0.49	0.00 – 0.23	1.40	0.055	0.504	0.422	0.151	0.775	0.0052 ± 0.0334 ± 0.0051	0.0052 ± 0.0334 ± 0.0051
		0.23 – 0.36	1.45	0.051	0.563	0.422	0.298	0.705	0.0439 ± 0.0485 ± 0.0004	0.0439 ± 0.0485 ± 0.0004
		0.36 – 0.54	1.49	0.049	0.609	0.423	0.447	0.648	0.0635 ± 0.0365 ± 0.0073	0.0635 ± 0.0365 ± 0.0073
		0.54 – 2.00	1.54	0.046	0.668	0.425	0.747	0.569	0.0069 ± 0.0182 ± 0.0018	0.0069 ± 0.0182 ± 0.0018
	0.49 – 0.70	0.00 – 0.23	1.38	0.056	0.488	0.579	0.151	0.793	0.0291 ± 0.0368 ± 0.0068	0.0291 ± 0.0368 ± 0.0068
		0.23 – 0.36	1.41	0.053	0.529	0.578	0.298	0.745	-0.0003 ± 0.0502 ± 0.0091	-0.0003 ± 0.0502 ± 0.0091
		0.36 – 0.54	1.45	0.051	0.571	0.577	0.448	0.695	0.0429 ± 0.0479 ± 0.0037	0.0429 ± 0.0479 ± 0.0037
		0.54 – 2.00	1.51	0.048	0.633	0.577	0.786	0.618	0.0993 ± 0.0256 ± 0.0006	0.0993 ± 0.0256 ± 0.0006
0.072 – 0.098	0.20 – 0.28	0.00 – 0.23	2.10	0.084	0.484	0.239	0.140	0.792	0.0158 ± 0.0228 ± 0.0028	0.0158 ± 0.0228 ± 0.0028
		0.23 – 0.36	2.39	0.084	0.550	0.238	0.295	0.721	0.0188 ± 0.0277 ± 0.0119	0.0188 ± 0.0277 ± 0.0119
		0.36 – 0.54	2.47	0.084	0.572	0.239	0.441	0.692	0.0934 ± 0.0224 ± 0.0068	0.0934 ± 0.0224 ± 0.0068
		0.54 – 2.00	2.73	0.084	0.633	0.244	0.643	0.620	0.0644 ± 0.0339 ± 0.0008	0.0644 ± 0.0339 ± 0.0008
	0.28 – 0.37	0.00 – 0.23	1.89	0.084	0.434	0.321	0.142	0.834	-0.0556 ± 0.0246 ± 0.0031	-0.0556 ± 0.0246 ± 0.0031
		0.23 – 0.36	2.14	0.084	0.492	0.322	0.293	0.778	0.0810 ± 0.0351 ± 0.0093	0.0810 ± 0.0351 ± 0.0093
		0.36 – 0.54	2.30	0.084	0.530	0.321	0.444	0.736	0.0971 ± 0.0283 ± 0.0019	0.0971 ± 0.0283 ± 0.0019
		0.54 – 2.00	2.51	0.084	0.581	0.325	0.676	0.678	0.0886 ± 0.0285 ± 0.0117	0.0886 ± 0.0285 ± 0.0117
	0.37 – 0.49	0.00 – 0.23	1.83	0.085	0.420	0.423	0.146	0.846	0.0662 ± 0.0276 ± 0.0070	0.0662 ± 0.0276 ± 0.0070
		0.23 – 0.36	1.99	0.085	0.455	0.424	0.293	0.812	0.0669 ± 0.0362 ± 0.0063	0.0669 ± 0.0362 ± 0.0063
		0.36 – 0.54	2.18	0.084	0.502	0.425	0.443	0.766	0.0364 ± 0.0378 ± 0.0112	0.0364 ± 0.0378 ± 0.0112
		0.54 – 2.00	2.38	0.084	0.551	0.427	0.719	0.711	0.0652 ± 0.0291 ± 0.0027	0.0652 ± 0.0291 ± 0.0027
	0.49 – 0.70	0.00 – 0.23	1.78	0.085	0.407	0.578	0.148	0.857	0.0359 ± 0.0327 ± 0.0015	0.0359 ± 0.0327 ± 0.0015
		0.23 – 0.36	1.87	0.085	0.427	0.580	0.295	0.838	0.0784 ± 0.0355 ± 0.0018	0.0784 ± 0.0355 ± 0.0018
		0.36 – 0.54	2.02	0.084	0.463	0.583	0.443	0.806	0.0394 ± 0.0407 ± 0.0028	0.0394 ± 0.0407 ± 0.0028
		0.54 – 2.00	2.29	0.084	0.530	0.583	0.754	0.736	0.0852 ± 0.0329 ± 0.0007	0.0852 ± 0.0329 ± 0.0007
0.098 – 0.138	0.20 – 0.28	0.00 – 0.23	2.86	0.116	0.477	0.239	0.139	0.799	0.0133 ± 0.0198 ± 0.0043	0.0133 ± 0.0198 ± 0.0043
		0.23 – 0.36	3.18	0.116	0.532	0.239	0.292	0.742	0.0032 ± 0.0255 ± 0.0069	0.0032 ± 0.0255 ± 0.0069
		0.36 – 0.54	3.26	0.115	0.547	0.239	0.441	0.721	0.0346 ± 0.0246 ± 0.0064	0.0346 ± 0.0246 ± 0.0064
		0.54 – 2.00	3.53	0.115	0.593	0.244	0.638	0.670	0.0491 ± 0.0422 ± 0.0005	0.0491 ± 0.0422 ± 0.0005
	0.28 – 0.37	0.00 – 0.23	2.53	0.116	0.422	0.322	0.143	0.843	0.0402 ± 0.0211 ± 0.0017	0.0402 ± 0.0211 ± 0.0017
		0.23 – 0.36	2.81	0.116	0.469	0.323	0.291	0.799	0.0351 ± 0.0275 ± 0.0032	0.0351 ± 0.0275 ± 0.0032
		0.36 – 0.54	3.03	0.116	0.508	0.322	0.442	0.759	0.0638 ± 0.0269 ± 0.0033	0.0638 ± 0.0269 ± 0.0033
		0.54 – 2.00	3.21	0.115	0.539	0.325	0.672	0.725	0.0236 ± 0.0315 ± 0.0071	0.0236 ± 0.0315 ± 0.0071
	0.37 – 0.49	0.00 – 0.23	2.41	0.116	0.402	0.423	0.148	0.857	-0.0185 ± 0.0249 ± 0.0017	-0.0185 ± 0.0249 ± 0.0017
		0.23 – 0.36	2.51	0.116	0.418	0.426	0.293	0.841	0.0221 ± 0.0264 ± 0.0025	0.0221 ± 0.0264 ± 0.0025
		0.36 – 0.54	2.84	0.116	0.475	0.427	0.441	0.791	0.0454 ± 0.0297 ± 0.0028	0.0454 ± 0.0297 ± 0.0028
		0.54 – 2.00	3.11	0.116	0.521	0.427	0.716	0.741	0.0558 ± 0.0292 ± 0.0073	0.0558 ± 0.0292 ± 0.0073
	0.49 – 0.70	0.00 – 0.23	2.38	0.116	0.398	0.577	0.151	0.862	0.0182 ± 0.0294 ± 0.0043	0.0182 ± 0.0294 ± 0.0043
		0.23 – 0.36	2.40	0.116	0.400	0.579	0.296	0.858	0.0652 ± 0.0283 ± 0.0003	0.0652 ± 0.0283 ± 0.0003
		0.36 – 0.54	2.55	0.116	0.426	0.582	0.441	0.835	0.1051 ± 0.0288 ± 0.0010	0.1051 ± 0.0288 ± 0.0010
		0.54 – 2.00	2.98	0.115	0.500	0.584	0.742	0.765	0.1383 ± 0.0292 ± 0.0059	0.1383 ± 0.0292 ± 0.0059
0.138 – 0.600	0.20 – 0.28	0.00 – 0.23	4.95	0.205	0.467	0.239	0.141	0.811	-0.0095 ± 0.0160 ± 0.0047	-0.0095 ± 0.0160 ± 0.0047
		0.23 – 0.36	5.26	0.214	0.486	0.241	0.290	0.790	0.0534 ± 0.0207 ± 0.0031	0.0534 ± 0.0207 ± 0.0031
		0.36 – 0.54	5.21	0.207	0.497	0.240	0.440	0.776	0.0025 ± 0.0272 ± 0.0002	0.0025 ± 0.0272 ± 0.0002
		0.54 – 2.00	5.42	0.209	0.515	0.244	0.637	0.759	-0.0376 ± 0.0670 ± 0.0080	-0.0376 ± 0.0670 ± 0.0080
	0.28 – 0.37	0.00 – 0.23	4.48	0.201	0.428	0.321	0.147	0.841	-0.0011 ± 0.0179 ± 0.0058	-0.0011 ± 0.0179 ± 0.0058
		0.23 – 0.36	4.64	0.210	0.430	0.323	0.292	0.835	0.0693 ± 0.0209 ± 0.0013	0.0693 ± 0.0209 ± 0.0013
		0.36 – 0.54	4.89	0.211	0.457	0.324	0.439	0.810	0.0455 ± 0.0237 ± 0.0009	0.0455 ± 0.0237 ± 0.0009
		0.54 – 2.00	4.93	0.205	0.474	0.325	0.671	0.793	0.1072 ± 0.0384 ± 0.0035	0.1072 ± 0.0384 ± 0.0035
	0.37 – 0.49	0.00 – 0.23	4.38	0.201	0.419	0.422	0.150	0.847	0.0229 ± 0.0210 ± 0.0039	0.0229 ± 0.0210 ± 0.0039
		0.23 – 0.36	4.38	0.205	0.413	0.424	0.294	0.850	0.0540 ± 0.0224 ± 0.0016	0.0540 ± 0.0224 ± 0.0016
		0.36 – 0.54	4.65	0.210	0.432	0.427	0.438	0.832	0.0756 ± 0.0228 ± 0.0022	0.0756 ± 0.0228 ± 0.0022
		0.54 – 2.00	4.84	0.205	0.466	0.427	0.704	0.799	0.1103 ± 0.0290 ± 0.0023	0.1103 ± 0.0290 ± 0.0023
	0.49 – 0.70	0.00 – 0.23	4.33	0.200	0.414	0.575	0.153	0.852	0.0291 ± 0.0258 ± 0.0025	0.0291 ± 0.0258 ± 0.0025
		0.23 – 0.36	4.28	0.200	0.410	0.577	0.296	0.852	0.0319 ± 0.0252 ± 0.0017	0.0319 ± 0.0252 ± 0.0017
		0.36 – 0.54	4.41	0.206	0.413	0.580	0.444	0.848	0.1233 ± 0.0229 ± 0.0037	0.1233 ± 0.0229 ± 0.0037
		0.54 – 2.00	4.82	0.209	0.454	0.587	0.723	0.811	0.0914 ± 0.0238 ± 0.0101	0.0914 ± 0.0238 ± 0.0101

Table 21. Three-dimensionally binned SFA and CSA amplitudes of the $\sin(\phi - \phi_S)$ modulation for π^+ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin			Average kinematics						π^-	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(\phi - \phi_S) \rangle_{U\perp}$	$2\langle \sin(\phi - \phi_S) \rangle_{U\perp}$
0.023 – 0.072	0.20 – 0.28	0.00 – 0.23	1.46	0.052	0.561	0.236	0.152	0.709	0.0256 ± 0.0296 ± 0.0026	0.0256 ± 0.0296 ± 0.0026
		0.23 – 0.36	1.51	0.047	0.636	0.234	0.298	0.613	0.0019 ± 0.0228 ± 0.0006	0.0019 ± 0.0228 ± 0.0006
		0.36 – 0.54	1.53	0.045	0.674	0.236	0.443	0.561	0.0078 ± 0.0144 ± 0.0039	0.0078 ± 0.0144 ± 0.0039
		0.54 – 2.00	1.58	0.043	0.729	0.241	0.658	0.483	0.0237 ± 0.0180 ± 0.0025	0.0237 ± 0.0180 ± 0.0025
	0.28 – 0.37	0.00 – 0.23	1.43	0.054	0.527	0.320	0.150	0.748	0.0206 ± 0.0341 ± 0.0010	0.0206 ± 0.0341 ± 0.0010
		0.23 – 0.36	1.48	0.049	0.597	0.320	0.296	0.662	0.0499 ± 0.0438 ± 0.0015	0.0499 ± 0.0438 ± 0.0015
		0.36 – 0.54	1.50	0.047	0.643	0.319	0.449	0.603	0.0221 ± 0.0229 ± 0.0024	0.0221 ± 0.0229 ± 0.0024
		0.54 – 2.00	1.55	0.045	0.692	0.323	0.703	0.536	0.0318 ± 0.0171 ± 0.0022	0.0318 ± 0.0171 ± 0.0022
	0.37 – 0.49	0.00 – 0.23	1.40	0.055	0.505	0.422	0.152	0.774	0.0628 ± 0.0384 ± 0.0050	0.0628 ± 0.0384 ± 0.0050
		0.23 – 0.36	1.45	0.051	0.566	0.423	0.298	0.701	-0.0647 ± 0.0561 ± 0.0029	-0.0647 ± 0.0561 ± 0.0029
		0.36 – 0.54	1.49	0.048	0.615	0.423	0.448	0.640	-0.0225 ± 0.0416 ± 0.0016	-0.0225 ± 0.0416 ± 0.0016
		0.54 – 2.00	1.53	0.046	0.669	0.424	0.749	0.568	-0.0236 ± 0.0207 ± 0.0053	-0.0236 ± 0.0207 ± 0.0053
	0.49 – 0.70	0.00 – 0.23	1.37	0.056	0.487	0.579	0.151	0.794	-0.0208 ± 0.0409 ± 0.0029	-0.0208 ± 0.0409 ± 0.0029
		0.23 – 0.36	1.41	0.053	0.532	0.580	0.298	0.743	-0.0095 ± 0.0575 ± 0.0026	-0.0095 ± 0.0575 ± 0.0026
		0.36 – 0.54	1.44	0.050	0.575	0.578	0.446	0.691	0.0574 ± 0.0593 ± 0.0057	0.0574 ± 0.0593 ± 0.0057
		0.54 – 2.00	1.51	0.047	0.638	0.573	0.785	0.611	0.0383 ± 0.0300 ± 0.0009	0.0383 ± 0.0300 ± 0.0009
0.072 – 0.098	0.20 – 0.28	0.00 – 0.23	2.10	0.084	0.484	0.239	0.140	0.791	-0.0317 ± 0.0258 ± 0.0003	-0.0317 ± 0.0258 ± 0.0003
		0.23 – 0.36	2.37	0.084	0.547	0.237	0.294	0.724	-0.0381 ± 0.0304 ± 0.0052	-0.0381 ± 0.0304 ± 0.0052
		0.36 – 0.54	2.46	0.084	0.569	0.238	0.440	0.695	-0.0187 ± 0.0256 ± 0.0012	-0.0187 ± 0.0256 ± 0.0012
		0.54 – 2.00	2.72	0.083	0.632	0.244	0.644	0.622	0.0161 ± 0.0387 ± 0.0072	0.0161 ± 0.0387 ± 0.0072
	0.28 – 0.37	0.00 – 0.23	1.88	0.084	0.432	0.321	0.142	0.836	-0.0329 ± 0.0284 ± 0.0030	-0.0329 ± 0.0284 ± 0.0030
		0.23 – 0.36	2.13	0.084	0.490	0.322	0.292	0.779	0.0334 ± 0.0416 ± 0.0056	0.0334 ± 0.0416 ± 0.0056
		0.36 – 0.54	2.26	0.084	0.523	0.320	0.445	0.742	-0.0391 ± 0.0322 ± 0.0030	-0.0391 ± 0.0322 ± 0.0030
		0.54 – 2.00	2.48	0.084	0.575	0.324	0.678	0.685	-0.0312 ± 0.0330 ± 0.0092	-0.0312 ± 0.0330 ± 0.0092
	0.37 – 0.49	0.00 – 0.23	1.82	0.084	0.418	0.423	0.146	0.847	0.0000 ± 0.0335 ± 0.0022	0.0000 ± 0.0335 ± 0.0022
		0.23 – 0.36	1.95	0.084	0.448	0.424	0.292	0.819	-0.0606 ± 0.0438 ± 0.0021	-0.0606 ± 0.0438 ± 0.0021
		0.36 – 0.54	2.17	0.084	0.502	0.424	0.442	0.767	0.0504 ± 0.0446 ± 0.0009	0.0504 ± 0.0446 ± 0.0009
		0.54 – 2.00	2.37	0.084	0.546	0.425	0.724	0.715	-0.0670 ± 0.0341 ± 0.0122	-0.0670 ± 0.0341 ± 0.0122
	0.49 – 0.70	0.00 – 0.23	1.78	0.084	0.407	0.579	0.148	0.856	0.0248 ± 0.0399 ± 0.0043	0.0248 ± 0.0399 ± 0.0043
		0.23 – 0.36	1.85	0.084	0.425	0.581	0.295	0.840	-0.0242 ± 0.0408 ± 0.0113	-0.0242 ± 0.0408 ± 0.0113
		0.36 – 0.54	2.00	0.084	0.461	0.582	0.442	0.808	-0.0465 ± 0.0477 ± 0.0016	-0.0465 ± 0.0477 ± 0.0016
		0.54 – 2.00	2.26	0.084	0.524	0.580	0.751	0.743	0.0233 ± 0.0411 ± 0.0073	0.0233 ± 0.0411 ± 0.0073
0.098 – 0.138	0.20 – 0.28	0.00 – 0.23	2.86	0.116	0.477	0.239	0.138	0.799	-0.0050 ± 0.0227 ± 0.0011	-0.0050 ± 0.0227 ± 0.0011
		0.23 – 0.36	3.17	0.116	0.531	0.238	0.292	0.743	0.0258 ± 0.0297 ± 0.0046	0.0258 ± 0.0297 ± 0.0046
		0.36 – 0.54	3.25	0.115	0.545	0.239	0.442	0.724	-0.0045 ± 0.0287 ± 0.0065	-0.0045 ± 0.0287 ± 0.0065
		0.54 – 2.00	3.54	0.116	0.593	0.244	0.645	0.671	0.0238 ± 0.0497 ± 0.0073	0.0238 ± 0.0497 ± 0.0073
	0.28 – 0.37	0.00 – 0.23	2.52	0.116	0.420	0.321	0.144	0.844	0.0393 ± 0.0254 ± 0.0054	0.0393 ± 0.0254 ± 0.0054
		0.23 – 0.36	2.77	0.116	0.462	0.323	0.291	0.806	-0.0079 ± 0.0336 ± 0.0041	-0.0079 ± 0.0336 ± 0.0041
		0.36 – 0.54	2.98	0.116	0.500	0.322	0.444	0.766	-0.0384 ± 0.0316 ± 0.0039	-0.0384 ± 0.0316 ± 0.0039
		0.54 – 2.00	3.17	0.116	0.532	0.324	0.675	0.732	0.0042 ± 0.0367 ± 0.0003	0.0042 ± 0.0367 ± 0.0003
	0.37 – 0.49	0.00 – 0.23	2.39	0.116	0.399	0.422	0.148	0.860	-0.0032 ± 0.0304 ± 0.0024	-0.0032 ± 0.0304 ± 0.0024
		0.23 – 0.36	2.48	0.116	0.413	0.425	0.293	0.845	-0.0627 ± 0.0328 ± 0.0039	-0.0627 ± 0.0328 ± 0.0039
		0.36 – 0.54	2.80	0.116	0.467	0.426	0.441	0.797	-0.0277 ± 0.0378 ± 0.0007	-0.0277 ± 0.0378 ± 0.0007
		0.54 – 2.00	3.00	0.115	0.504	0.424	0.716	0.756	-0.0077 ± 0.0354 ± 0.0079	-0.0077 ± 0.0354 ± 0.0079
	0.49 – 0.70	0.00 – 0.23	2.37	0.116	0.396	0.579	0.150	0.863	-0.0204 ± 0.0363 ± 0.0029	-0.0204 ± 0.0363 ± 0.0029
		0.23 – 0.36	2.39	0.116	0.399	0.577	0.295	0.859	-0.0709 ± 0.0350 ± 0.0064	-0.0709 ± 0.0350 ± 0.0064
		0.36 – 0.54	2.55	0.116	0.426	0.583	0.441	0.834	-0.0320 ± 0.0365 ± 0.0028	-0.0320 ± 0.0365 ± 0.0028
		0.54 – 2.00	2.92	0.115	0.490	0.581	0.747	0.774	0.0220 ± 0.0370 ± 0.0086	0.0220 ± 0.0370 ± 0.0086
0.138 – 0.600	0.20 – 0.28	0.00 – 0.23	4.91	0.204	0.467	0.239	0.141	0.811	0.0040 ± 0.0192 ± 0.0019	0.0040 ± 0.0192 ± 0.0019
		0.23 – 0.36	5.22	0.212	0.486	0.240	0.290	0.790	0.0155 ± 0.0254 ± 0.0014	0.0155 ± 0.0254 ± 0.0014
		0.36 – 0.54	5.18	0.205	0.499	0.239	0.443	0.775	0.0196 ± 0.0335 ± 0.0019	0.0196 ± 0.0335 ± 0.0019
		0.54 – 2.00	5.40	0.211	0.509	0.243	0.645	0.767	-0.0459 ± 0.0810 ± 0.0111	-0.0459 ± 0.0810 ± 0.0111
	0.28 – 0.37	0.00 – 0.23	4.41	0.199	0.426	0.321	0.148	0.842	-0.0170 ± 0.0223 ± 0.0003	-0.0170 ± 0.0223 ± 0.0003
		0.23 – 0.36	4.55	0.208	0.426	0.322	0.291	0.839	-0.0050 ± 0.0258 ± 0.0033	-0.0050 ± 0.0258 ± 0.0033
		0.36 – 0.54	4.80	0.211	0.450	0.323	0.440	0.816	0.0219 ± 0.0304 ± 0.0011	0.0219 ± 0.0304 ± 0.0011
		0.54 – 2.00	4.79	0.204	0.464	0.324	0.679	0.802	-0.0336 ± 0.0474 ± 0.0012	-0.0336 ± 0.0474 ± 0.0012
	0.37 – 0.49	0.00 – 0.23	4.26	0.197	0.414	0.422	0.149	0.852	0.0390 ± 0.0272 ± 0.0001	0.0390 ± 0.0272 ± 0.0001
		0.23 – 0.36	4.31	0.203	0.410	0.424	0.294	0.852	0.0357 ± 0.0284 ± 0.0001	0.0357 ± 0.0284 ± 0.0001
		0.36 – 0.54	4.59	0.212	0.423	0.425	0.438	0.840	0.0447 ± 0.0301 ± 0.0032	0.0447 ± 0.0301 ± 0.0032
		0.54 – 2.00	4.78	0.208	0.453	0.426	0.712	0.809	0.0622 ± 0.0372 ± 0.0078	0.0622 ± 0.0372 ± 0.0078
	0.49 – 0.70	0.00 – 0.23	4.25	0.197	0.413	0.574	0.152	0.852	-0.0039 ± 0.0335 ± 0.0003	-0.0039 ± 0.0335 ± 0.0003
		0.23 – 0.36	4.13	0.198	0.400	0.574	0.295	0.861	0.0299 ± 0.0333 ± 0.0021	0.0299 ± 0.0333 ± 0.0021
		0.36 – 0.54	4.25	0.203	0.405	0.579	0.443	0.855	0.0008 ± 0.0320 ± 0.0041	0.0008 ± 0.0320 ± 0.0041
		0.54 – 2.00	4.67	0.210	0.437	0.581	0.726	0.825	-0.0278 ± 0.0335 ± 0.0023	-0.0278 ± 0.0335 ± 0.0023

Table 22. Three-dimensionally binned SFA and CSA amplitudes of the $\sin(\phi - \phi_S)$ modulation for π^- as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin			Average kinematics						K^+	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(\phi - \phi_S) \rangle_{U\perp}$	$2\langle \sin(\phi - \phi_S) \rangle_{U\perp}$
0.023 – 0.072	0.20 – 0.28	0.00 – 0.23	1.48	0.052	0.565	0.239	0.149	0.705	0.0202 ± 0.0778 ± 0.0043	0.0202 ± 0.0778 ± 0.0043
		0.23 – 0.36	1.54	0.048	0.638	0.237	0.297	0.612	-0.0478 ± 0.0738 ± 0.0076	-0.0478 ± 0.0738 ± 0.0076
		0.36 – 0.54	1.55	0.046	0.674	0.239	0.444	0.562	0.0894 ± 0.0400 ± 0.0106	0.0894 ± 0.0400 ± 0.0106
		0.54 – 2.00	1.59	0.043	0.734	0.242	0.670	0.476	-0.0373 ± 0.0423 ± 0.0097	-0.0373 ± 0.0423 ± 0.0097
	0.28 – 0.37	0.00 – 0.23	1.44	0.054	0.529	0.321	0.150	0.747	0.0237 ± 0.0803 ± 0.0125	0.0237 ± 0.0803 ± 0.0125
		0.23 – 0.36	1.51	0.050	0.603	0.322	0.298	0.657	-0.0281 ± 0.0984 ± 0.0099	-0.0281 ± 0.0984 ± 0.0099
		0.36 – 0.54	1.54	0.047	0.645	0.322	0.448	0.601	0.0106 ± 0.0609 ± 0.0006	0.0106 ± 0.0609 ± 0.0006
		0.54 – 2.00	1.56	0.044	0.701	0.326	0.722	0.523	0.0401 ± 0.0389 ± 0.0059	0.0401 ± 0.0389 ± 0.0059
	0.37 – 0.49	0.00 – 0.23	1.43	0.055	0.511	0.422	0.148	0.769	0.0280 ± 0.0733 ± 0.0054	0.0280 ± 0.0733 ± 0.0054
		0.23 – 0.36	1.47	0.052	0.557	0.424	0.297	0.713	-0.0474 ± 0.1170 ± 0.0070	-0.0474 ± 0.1170 ± 0.0070
		0.36 – 0.54	1.51	0.050	0.608	0.424	0.449	0.651	-0.0004 ± 0.0933 ± 0.0174	-0.0004 ± 0.0933 ± 0.0174
		0.54 – 2.00	1.56	0.046	0.671	0.428	0.763	0.565	0.1262 ± 0.0448 ± 0.0059	0.1262 ± 0.0448 ± 0.0059
	0.49 – 0.70	0.00 – 0.23	1.42	0.057	0.493	0.572	0.150	0.787	0.0965 ± 0.0870 ± 0.0216	0.0965 ± 0.0870 ± 0.0216
		0.23 – 0.36	1.44	0.054	0.534	0.573	0.298	0.740	0.2976 ± 0.1180 ± 0.0075	0.2976 ± 0.1180 ± 0.0075
		0.36 – 0.54	1.49	0.051	0.587	0.576	0.452	0.675	0.0559 ± 0.1204 ± 0.0133	0.0559 ± 0.1204 ± 0.0133
		0.54 – 2.00	1.53	0.048	0.637	0.580	0.805	0.612	0.0969 ± 0.0536 ± 0.0111	0.0969 ± 0.0536 ± 0.0111
0.072 – 0.098	0.20 – 0.28	0.00 – 0.23	2.21	0.084	0.508	0.241	0.142	0.770	0.1466 ± 0.0727 ± 0.0075	0.1466 ± 0.0727 ± 0.0075
		0.23 – 0.36	2.43	0.084	0.562	0.240	0.295	0.709	0.2098 ± 0.0833 ± 0.0116	0.2098 ± 0.0833 ± 0.0116
		0.36 – 0.54	2.50	0.084	0.578	0.241	0.440	0.683	0.0393 ± 0.0710 ± 0.0053	0.0393 ± 0.0710 ± 0.0053
		0.54 – 2.00	2.72	0.084	0.630	0.244	0.652	0.624	-0.0450 ± 0.0900 ± 0.0100	-0.0450 ± 0.0900 ± 0.0100
	0.28 – 0.37	0.00 – 0.23	1.98	0.084	0.455	0.323	0.142	0.816	0.0540 ± 0.0656 ± 0.0005	0.0540 ± 0.0656 ± 0.0005
		0.23 – 0.36	2.21	0.084	0.510	0.324	0.293	0.762	0.1865 ± 0.1004 ± 0.0059	0.1865 ± 0.1004 ± 0.0059
		0.36 – 0.54	2.38	0.084	0.550	0.324	0.446	0.714	0.0320 ± 0.0832 ± 0.0034	0.0320 ± 0.0832 ± 0.0034
		0.54 – 2.00	2.54	0.084	0.587	0.327	0.690	0.669	-0.0044 ± 0.0688 ± 0.0027	-0.0044 ± 0.0688 ± 0.0027
	0.37 – 0.49	0.00 – 0.23	1.88	0.085	0.429	0.423	0.145	0.839	-0.0183 ± 0.0628 ± 0.0070	-0.0183 ± 0.0628 ± 0.0070
		0.23 – 0.36	2.07	0.084	0.475	0.425	0.294	0.795	0.0078 ± 0.0927 ± 0.0156	0.0078 ± 0.0927 ± 0.0156
		0.36 – 0.54	2.23	0.084	0.512	0.427	0.445	0.758	0.2083 ± 0.0925 ± 0.0114	0.2083 ± 0.0925 ± 0.0114
		0.54 – 2.00	2.44	0.084	0.566	0.430	0.735	0.695	0.1534 ± 0.0677 ± 0.0045	0.1534 ± 0.0677 ± 0.0045
	0.49 – 0.70	0.00 – 0.23	1.88	0.085	0.427	0.577	0.150	0.842	0.0940 ± 0.0777 ± 0.0079	0.0940 ± 0.0777 ± 0.0079
		0.23 – 0.36	1.94	0.084	0.447	0.575	0.297	0.820	0.0097 ± 0.0911 ± 0.0098	0.0097 ± 0.0911 ± 0.0098
		0.36 – 0.54	2.06	0.085	0.470	0.583	0.446	0.798	0.1210 ± 0.0889 ± 0.0029	0.1210 ± 0.0889 ± 0.0029
		0.54 – 2.00	2.33	0.084	0.538	0.587	0.768	0.728	0.0873 ± 0.0724 ± 0.0015	0.0873 ± 0.0724 ± 0.0015
0.098 – 0.138	0.20 – 0.28	0.00 – 0.23	2.96	0.116	0.494	0.241	0.139	0.785	0.0622 ± 0.0630 ± 0.0128	0.0622 ± 0.0630 ± 0.0128
		0.23 – 0.36	3.31	0.116	0.554	0.239	0.290	0.718	0.1284 ± 0.0861 ± 0.0106	0.1284 ± 0.0861 ± 0.0106
		0.36 – 0.54	3.25	0.115	0.548	0.240	0.443	0.720	-0.1536 ± 0.0777 ± 0.0157	-0.1536 ± 0.0777 ± 0.0157
		0.54 – 2.00	3.53	0.115	0.596	0.245	0.650	0.664	-0.1480 ± 0.1144 ± 0.0349	-0.1480 ± 0.1144 ± 0.0349
	0.28 – 0.37	0.00 – 0.23	2.64	0.116	0.441	0.324	0.142	0.829	0.1082 ± 0.0545 ± 0.0095	0.1082 ± 0.0545 ± 0.0095
		0.23 – 0.36	2.91	0.116	0.485	0.326	0.292	0.787	0.0469 ± 0.0812 ± 0.0073	0.0469 ± 0.0812 ± 0.0073
		0.36 – 0.54	3.08	0.115	0.519	0.323	0.446	0.746	0.1014 ± 0.0764 ± 0.0106	0.1014 ± 0.0764 ± 0.0106
		0.54 – 2.00	3.20	0.116	0.535	0.327	0.682	0.726	0.0058 ± 0.0774 ± 0.0238	0.0058 ± 0.0774 ± 0.0238
	0.37 – 0.49	0.00 – 0.23	2.54	0.116	0.425	0.424	0.148	0.841	0.0986 ± 0.0577 ± 0.0012	0.0986 ± 0.0577 ± 0.0012
		0.23 – 0.36	2.66	0.116	0.441	0.427	0.291	0.824	0.1320 ± 0.0662 ± 0.0133	0.1320 ± 0.0662 ± 0.0133
		0.36 – 0.54	3.00	0.117	0.497	0.428	0.442	0.773	0.1549 ± 0.0786 ± 0.0164	0.1549 ± 0.0786 ± 0.0164
		0.54 – 2.00	3.21	0.115	0.539	0.428	0.716	0.723	0.1281 ± 0.0691 ± 0.0066	0.1281 ± 0.0691 ± 0.0066
	0.49 – 0.70	0.00 – 0.23	2.47	0.116	0.412	0.574	0.150	0.851	-0.0553 ± 0.0638 ± 0.0055	-0.0553 ± 0.0638 ± 0.0055
		0.23 – 0.36	2.50	0.116	0.418	0.577	0.296	0.845	0.0212 ± 0.0688 ± 0.0082	0.0212 ± 0.0688 ± 0.0082
		0.36 – 0.54	2.70	0.116	0.451	0.583	0.443	0.815	0.1185 ± 0.0672 ± 0.0028	0.1185 ± 0.0672 ± 0.0028
		0.54 – 2.00	3.06	0.115	0.514	0.588	0.752	0.752	0.1967 ± 0.0667 ± 0.0013	0.1967 ± 0.0667 ± 0.0013
0.138 – 0.600	0.20 – 0.28	0.00 – 0.23	5.15	0.207	0.485	0.242	0.138	0.795	-0.0535 ± 0.0511 ± 0.0067	-0.0535 ± 0.0511 ± 0.0067
		0.23 – 0.36	5.33	0.208	0.505	0.243	0.292	0.773	0.1002 ± 0.0701 ± 0.0094	0.1002 ± 0.0701 ± 0.0094
		0.36 – 0.54	5.06	0.196	0.508	0.241	0.445	0.765	0.0059 ± 0.0799 ± 0.0145	0.0059 ± 0.0799 ± 0.0145
		0.54 – 2.00	5.22	0.211	0.493	0.246	0.645	0.779	-0.3098 ± 0.1913 ± 0.0638	-0.3098 ± 0.1913 ± 0.0638
	0.28 – 0.37	0.00 – 0.23	4.76	0.204	0.449	0.323	0.142	0.825	0.0838 ± 0.0446 ± 0.0076	0.0838 ± 0.0446 ± 0.0076
		0.23 – 0.36	5.01	0.211	0.462	0.325	0.289	0.810	-0.0295 ± 0.0540 ± 0.0171	-0.0295 ± 0.0540 ± 0.0171
		0.36 – 0.54	5.04	0.203	0.488	0.325	0.443	0.783	0.0590 ± 0.0597 ± 0.0099	0.0590 ± 0.0597 ± 0.0099
		0.54 – 2.00	4.69	0.198	0.464	0.327	0.681	0.798	0.0245 ± 0.0877 ± 0.0060	0.0245 ± 0.0877 ± 0.0060
	0.37 – 0.49	0.00 – 0.23	4.63	0.204	0.435	0.424	0.150	0.836	0.0134 ± 0.0455 ± 0.0023	0.0134 ± 0.0455 ± 0.0023
		0.23 – 0.36	4.62	0.204	0.437	0.425	0.292	0.831	0.1245 ± 0.0485 ± 0.0054	0.1245 ± 0.0485 ± 0.0054
		0.36 – 0.54	4.91	0.210	0.458	0.426	0.439	0.812	0.1283 ± 0.0505 ± 0.0056	0.1283 ± 0.0505 ± 0.0056
		0.54 – 2.00	5.02	0.204	0.483	0.428	0.707	0.784	0.0888 ± 0.0623 ± 0.0289	0.0888 ± 0.0623 ± 0.0289
	0.49 – 0.70	0.00 – 0.23	4.55	0.204	0.426	0.576	0.149	0.843	0.1260 ± 0.0553 ± 0.0054	0.1260 ± 0.0553 ± 0.0054
		0.23 – 0.36	4.52	0.206	0.422	0.577	0.296	0.844	0.1530 ± 0.0516 ± 0.0058	0.1530 ± 0.0516 ± 0.0058
		0.36 – 0.54	4.63	0.207	0.435	0.583	0.443	0.831	0.1647 ± 0.0472 ± 0.0027	0.1647 ± 0.0472 ± 0.0027
		0.54 – 2.00	5.06	0.210	0.473	0.589	0.731	0.796	0.1524 ± 0.0510 ± 0.0025	0.1524 ± 0.0510 ± 0.0025

Table 23. Three-dimensionally binned SFA and CSA amplitudes of the $\sin(\phi - \phi_S)$ modulation for K^+ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin			Average kinematics						K^-	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(\phi - \phi_S) \rangle_{U\perp}$	$2\langle \sin(\phi - \phi_S) \rangle_{U\perp}$
0.023 – 0.072	0.20 – 0.28	0.00 – 0.23	1.48	0.051	0.575	0.236	0.152	0.692	0.1281 ± 0.1156 ± 0.0007	0.1281 ± 0.1156 ± 0.0007
		0.23 – 0.36	1.51	0.047	0.646	0.236	0.298	0.601	0.0554 ± 0.0849 ± 0.0042	0.0554 ± 0.0849 ± 0.0042
		0.36 – 0.54	1.54	0.045	0.684	0.237	0.444	0.547	-0.0279 ± 0.0495 ± 0.0004	-0.0279 ± 0.0495 ± 0.0004
		0.54 – 2.00	1.61	0.043	0.744	0.242	0.666	0.461	0.0146 ± 0.0532 ± 0.0008	0.0146 ± 0.0532 ± 0.0008
	0.28 – 0.37	0.00 – 0.23	1.45	0.053	0.537	0.319	0.151	0.738	0.1221 ± 0.1057 ± 0.0020	0.1221 ± 0.1057 ± 0.0020
		0.23 – 0.36	1.50	0.049	0.608	0.320	0.296	0.650	0.1187 ± 0.1492 ± 0.0076	0.1187 ± 0.1492 ± 0.0076
		0.36 – 0.54	1.51	0.047	0.644	0.319	0.449	0.602	-0.0059 ± 0.0812 ± 0.0025	-0.0059 ± 0.0812 ± 0.0025
		0.54 – 2.00	1.56	0.044	0.701	0.324	0.724	0.523	-0.0153 ± 0.0503 ± 0.0084	-0.0153 ± 0.0503 ± 0.0084
	0.37 – 0.49	0.00 – 0.23	1.40	0.054	0.513	0.424	0.146	0.768	-0.0362 ± 0.1200 ± 0.0128	-0.0362 ± 0.1200 ± 0.0128
		0.23 – 0.36	1.48	0.051	0.579	0.422	0.298	0.689	0.0895 ± 0.1681 ± 0.0080	0.0895 ± 0.1681 ± 0.0080
		0.36 – 0.54	1.53	0.049	0.622	0.423	0.448	0.633	-0.1303 ± 0.1369 ± 0.0090	-0.1303 ± 0.1369 ± 0.0090
		0.54 – 2.00	1.54	0.045	0.674	0.425	0.770	0.562	0.0554 ± 0.0618 ± 0.0006	0.0554 ± 0.0618 ± 0.0006
	0.49 – 0.70	0.00 – 0.23	1.41	0.055	0.508	0.562	0.151	0.771	0.3822 ± 0.1332 ± 0.0050	0.3822 ± 0.1332 ± 0.0050
		0.23 – 0.36	1.44	0.052	0.550	0.566	0.298	0.721	0.0204 ± 0.1653 ± 0.0088	0.0204 ± 0.1653 ± 0.0088
		0.36 – 0.54	1.49	0.050	0.595	0.572	0.446	0.664	0.3863 ± 0.1688 ± 0.0042	0.3863 ± 0.1688 ± 0.0042
		0.54 – 2.00	1.53	0.046	0.662	0.569	0.799	0.578	0.1004 ± 0.0903 ± 0.0046	0.1004 ± 0.0903 ± 0.0046
0.072 – 0.098	0.20 – 0.28	0.00 – 0.23	2.18	0.084	0.503	0.239	0.139	0.775	0.0143 ± 0.1076 ± 0.0030	0.0143 ± 0.1076 ± 0.0030
		0.23 – 0.36	2.46	0.084	0.568	0.237	0.294	0.701	-0.1778 ± 0.1363 ± 0.0050	-0.1778 ± 0.1363 ± 0.0050
		0.36 – 0.54	2.54	0.084	0.586	0.237	0.440	0.677	0.0761 ± 0.0911 ± 0.0026	0.0761 ± 0.0911 ± 0.0026
		0.54 – 2.00	2.75	0.084	0.637	0.242	0.648	0.614	0.0025 ± 0.1287 ± 0.0030	0.0025 ± 0.1287 ± 0.0030
	0.28 – 0.37	0.00 – 0.23	1.95	0.084	0.448	0.323	0.138	0.824	0.0764 ± 0.0927 ± 0.0033	0.0764 ± 0.0927 ± 0.0033
		0.23 – 0.36	2.24	0.084	0.518	0.322	0.292	0.752	-0.2750 ± 0.1828 ± 0.0114	-0.2750 ± 0.1828 ± 0.0114
		0.36 – 0.54	2.40	0.084	0.555	0.321	0.444	0.712	-0.0765 ± 0.1167 ± 0.0033	-0.0765 ± 0.1167 ± 0.0033
		0.54 – 2.00	2.48	0.084	0.573	0.324	0.693	0.689	0.0791 ± 0.1026 ± 0.0009	0.0791 ± 0.1026 ± 0.0009
	0.37 – 0.49	0.00 – 0.23	1.84	0.084	0.426	0.424	0.143	0.842	0.0606 ± 0.1067 ± 0.0003	0.0606 ± 0.1067 ± 0.0003
		0.23 – 0.36	2.06	0.084	0.475	0.424	0.294	0.794	-0.0190 ± 0.1364 ± 0.0109	-0.0190 ± 0.1364 ± 0.0109
		0.36 – 0.54	2.27	0.083	0.528	0.424	0.443	0.743	0.0675 ± 0.1527 ± 0.0022	0.0675 ± 0.1527 ± 0.0022
		0.54 – 2.00	2.45	0.084	0.566	0.423	0.727	0.695	-0.0318 ± 0.1137 ± 0.0042	-0.0318 ± 0.1137 ± 0.0042
	0.49 – 0.70	0.00 – 0.23	1.89	0.085	0.431	0.567	0.150	0.837	0.1248 ± 0.1307 ± 0.0192	0.1248 ± 0.1307 ± 0.0192
		0.23 – 0.36	2.00	0.085	0.455	0.570	0.295	0.811	-0.2583 ± 0.1313 ± 0.0090	-0.2583 ± 0.1313 ± 0.0090
		0.36 – 0.54	2.16	0.084	0.495	0.577	0.440	0.775	-0.2553 ± 0.1700 ± 0.0107	-0.2553 ± 0.1700 ± 0.0107
		0.54 – 2.00	2.42	0.084	0.556	0.570	0.772	0.707	0.1478 ± 0.1280 ± 0.0199	0.1478 ± 0.1280 ± 0.0199
0.098 – 0.138	0.20 – 0.28	0.00 – 0.23	3.02	0.116	0.505	0.240	0.138	0.774	-0.0285 ± 0.0897 ± 0.0104	-0.0285 ± 0.0897 ± 0.0104
		0.23 – 0.36	3.26	0.115	0.549	0.241	0.290	0.727	0.1927 ± 0.1282 ± 0.0054	0.1927 ± 0.1282 ± 0.0054
		0.36 – 0.54	3.30	0.115	0.556	0.238	0.444	0.713	-0.1565 ± 0.1067 ± 0.0062	-0.1565 ± 0.1067 ± 0.0062
		0.54 – 2.00	3.61	0.115	0.607	0.243	0.649	0.655	0.1730 ± 0.1599 ± 0.0063	0.1730 ± 0.1599 ± 0.0063
	0.28 – 0.37	0.00 – 0.23	2.69	0.116	0.450	0.323	0.142	0.819	0.0039 ± 0.0878 ± 0.0115	0.0039 ± 0.0878 ± 0.0115
		0.23 – 0.36	2.98	0.116	0.501	0.322	0.294	0.769	-0.0490 ± 0.1315 ± 0.0011	-0.0490 ± 0.1315 ± 0.0011
		0.36 – 0.54	3.06	0.115	0.516	0.324	0.450	0.750	0.0331 ± 0.1097 ± 0.0183	0.0331 ± 0.1097 ± 0.0183
		0.54 – 2.00	3.34	0.116	0.559	0.324	0.694	0.703	0.2309 ± 0.1153 ± 0.0037	0.2309 ± 0.1153 ± 0.0037
	0.37 – 0.49	0.00 – 0.23	2.42	0.115	0.408	0.423	0.149	0.854	0.2872 ± 0.0946 ± 0.0126	0.2872 ± 0.0946 ± 0.0126
		0.23 – 0.36	2.69	0.117	0.447	0.427	0.293	0.819	-0.0804 ± 0.1123 ± 0.0172	-0.0804 ± 0.1123 ± 0.0172
		0.36 – 0.54	2.94	0.116	0.491	0.428	0.442	0.778	-0.0178 ± 0.1349 ± 0.0149	-0.0178 ± 0.1349 ± 0.0149
		0.54 – 2.00	3.19	0.114	0.540	0.424	0.741	0.723	0.1363 ± 0.1074 ± 0.0024	0.1363 ± 0.1074 ± 0.0024
	0.49 – 0.70	0.00 – 0.23	2.43	0.115	0.407	0.563	0.149	0.854	0.0838 ± 0.1388 ± 0.0069	0.0838 ± 0.1388 ± 0.0069
		0.23 – 0.36	2.47	0.115	0.416	0.572	0.295	0.848	-0.0472 ± 0.1293 ± 0.0020	-0.0472 ± 0.1293 ± 0.0020
		0.36 – 0.54	2.72	0.116	0.453	0.577	0.435	0.813	0.0880 ± 0.1334 ± 0.0044	0.0880 ± 0.1334 ± 0.0044
		0.54 – 2.00	3.08	0.115	0.517	0.574	0.764	0.750	0.0584 ± 0.1253 ± 0.0196	0.0584 ± 0.1253 ± 0.0196
0.138 – 0.600	0.20 – 0.28	0.00 – 0.23	4.98	0.201	0.481	0.241	0.144	0.800	-0.0493 ± 0.0685 ± 0.0003	-0.0493 ± 0.0685 ± 0.0003
		0.23 – 0.36	5.30	0.206	0.507	0.241	0.290	0.770	0.0345 ± 0.0952 ± 0.0098	0.0345 ± 0.0952 ± 0.0098
		0.36 – 0.54	5.32	0.204	0.518	0.239	0.449	0.757	0.1907 ± 0.1220 ± 0.0246	0.1907 ± 0.1220 ± 0.0246
		0.54 – 2.00	5.44	0.205	0.527	0.245	0.663	0.747	0.0099 ± 0.3316 ± 0.0363	0.0099 ± 0.3316 ± 0.0363
	0.28 – 0.37	0.00 – 0.23	4.71	0.203	0.451	0.322	0.146	0.822	0.0104 ± 0.0736 ± 0.0049	0.0104 ± 0.0736 ± 0.0049
		0.23 – 0.36	4.92	0.209	0.462	0.325	0.291	0.809	0.0825 ± 0.0831 ± 0.0006	0.0825 ± 0.0831 ± 0.0006
		0.36 – 0.54	4.90	0.205	0.473	0.325	0.441	0.795	0.0468 ± 0.1046 ± 0.0273	0.0468 ± 0.1046 ± 0.0273
		0.54 – 2.00	5.07	0.200	0.503	0.324	0.691	0.765	0.0535 ± 0.1286 ± 0.0704	0.0535 ± 0.1286 ± 0.0704
	0.37 – 0.49	0.00 – 0.23	4.35	0.195	0.430	0.420	0.149	0.839	0.0006 ± 0.0923 ± 0.0138	0.0006 ± 0.0923 ± 0.0138
		0.23 – 0.36	4.49	0.205	0.422	0.423	0.293	0.843	0.1364 ± 0.0935 ± 0.0022	0.1364 ± 0.0935 ± 0.0022
		0.36 – 0.54	4.75	0.207	0.450	0.426	0.437	0.817	0.0045 ± 0.0940 ± 0.0139	0.0045 ± 0.0940 ± 0.0139
		0.54 – 2.00	4.87	0.203	0.474	0.425	0.728	0.792	0.0541 ± 0.1111 ± 0.0286	0.0541 ± 0.1111 ± 0.0286
	0.49 – 0.70	0.00 – 0.23	4.39	0.196	0.432	0.562	0.154	0.839	0.1143 ± 0.1199 ± 0.0246	0.1143 ± 0.1199 ± 0.0246
		0.23 – 0.36	4.35	0.201	0.419	0.571	0.294	0.846	-0.2381 ± 0.1310 ± 0.0013	-0.2381 ± 0.1310 ± 0.0013
		0.36 – 0.54	4.56	0.207	0.429	0.577	0.440	0.838	0.0688 ± 0.1059 ± 0.0059	0.0688 ± 0.1059 ± 0.0059
		0.54 – 2.00	4.85	0.204	0.470	0.579	0.735	0.796	0.1073 ± 0.1186 ± 0.0201	0.1073 ± 0.1186 ± 0.0201

Table 24. Three-dimensionally binned SFA and CSA amplitudes of the $\sin(\phi - \phi_S)$ modulation for K^- as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin			Average kinematics						p	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(\phi - \phi_S) \rangle_{U\perp}$	$2\langle \sin(\phi - \phi_S) \rangle_{U\perp}$
0.023 – 0.073	0.20 – 0.34	0.00 – 0.24	1.60	0.048	0.656	0.281	0.167	0.598	-0.0234 ± 0.1187 ± 0.0394	-0.0234 ± 0.1187 ± 0.0394
		0.24 – 0.40	1.61	0.045	0.698	0.274	0.327	0.535	0.0538 ± 0.0782 ± 0.0027	0.0538 ± 0.0782 ± 0.0027
		0.40 – 0.57	1.60	0.044	0.713	0.271	0.483	0.512	-0.0305 ± 0.0449 ± 0.0028	-0.0305 ± 0.0449 ± 0.0028
		0.57 – 2.00	1.60	0.043	0.734	0.276	0.728	0.480	0.0570 ± 0.0324 ± 0.0073	0.0570 ± 0.0324 ± 0.0073
	0.34 – 0.43	0.00 – 0.24	1.48	0.053	0.544	0.384	0.157	0.736	0.0296 ± 0.0858 ± 0.0049	0.0296 ± 0.0858 ± 0.0049
		0.24 – 0.40	1.51	0.050	0.603	0.384	0.322	0.659	-0.1326 ± 0.1171 ± 0.0041	-0.1326 ± 0.1171 ± 0.0041
		0.40 – 0.57	1.54	0.049	0.632	0.383	0.483	0.620	0.0870 ± 0.0898 ± 0.0063	0.0870 ± 0.0898 ± 0.0063
		0.57 – 2.00	1.54	0.046	0.669	0.384	0.766	0.568	0.1049 ± 0.0447 ± 0.0051	0.1049 ± 0.0447 ± 0.0051
	0.43 – 0.52	0.00 – 0.24	1.43	0.056	0.503	0.473	0.159	0.777	-0.0765 ± 0.0937 ± 0.0131	-0.0765 ± 0.0937 ± 0.0131
		0.24 – 0.40	1.47	0.052	0.567	0.471	0.322	0.699	0.2015 ± 0.1263 ± 0.0134	0.2015 ± 0.1263 ± 0.0134
		0.40 – 0.57	1.50	0.050	0.597	0.472	0.481	0.663	0.0521 ± 0.1226 ± 0.0046	0.0521 ± 0.1226 ± 0.0046
		0.57 – 2.00	1.52	0.047	0.641	0.471	0.796	0.604	0.0030 ± 0.0613 ± 0.0105	0.0030 ± 0.0613 ± 0.0105
	0.52 – 0.70	0.00 – 0.24	1.40	0.057	0.487	0.588	0.153	0.795	0.0789 ± 0.1005 ± 0.0042	0.0789 ± 0.1005 ± 0.0042
		0.24 – 0.40	1.45	0.055	0.527	0.587	0.321	0.747	0.2190 ± 0.1316 ± 0.0096	0.2190 ± 0.1316 ± 0.0096
		0.40 – 0.57	1.46	0.052	0.561	0.589	0.482	0.707	-0.2316 ± 0.1456 ± 0.0141	-0.2316 ± 0.1456 ± 0.0141
		0.57 – 2.00	1.50	0.049	0.607	0.591	0.808	0.649	-0.0446 ± 0.0724 ± 0.0186	-0.0446 ± 0.0724 ± 0.0186
0.073 – 0.107	0.20 – 0.34	0.00 – 0.24	2.83	0.089	0.617	0.293	0.158	0.653	0.1094 ± 0.1131 ± 0.0174	0.1094 ± 0.1131 ± 0.0174
		0.24 – 0.40	2.91	0.088	0.638	0.285	0.321	0.624	-0.0508 ± 0.1050 ± 0.0199	-0.0508 ± 0.1050 ± 0.0199
		0.40 – 0.57	3.01	0.088	0.661	0.279	0.481	0.592	-0.0177 ± 0.0839 ± 0.0025	-0.0177 ± 0.0839 ± 0.0025
		0.57 – 2.00	3.03	0.088	0.666	0.282	0.718	0.584	0.1189 ± 0.0621 ± 0.0050	0.1189 ± 0.0621 ± 0.0050
	0.34 – 0.43	0.00 – 0.24	2.34	0.089	0.509	0.385	0.148	0.775	0.0585 ± 0.0732 ± 0.0082	0.0585 ± 0.0732 ± 0.0082
		0.24 – 0.40	2.49	0.088	0.545	0.385	0.317	0.732	-0.0295 ± 0.1005 ± 0.0081	-0.0295 ± 0.1005 ± 0.0081
		0.40 – 0.57	2.53	0.088	0.558	0.385	0.480	0.717	0.1538 ± 0.1059 ± 0.0135	0.1538 ± 0.1059 ± 0.0135
		0.57 – 2.00	2.63	0.088	0.575	0.385	0.744	0.694	-0.0007 ± 0.0682 ± 0.0013	-0.0007 ± 0.0682 ± 0.0013
	0.43 – 0.52	0.00 – 0.24	2.10	0.089	0.458	0.473	0.155	0.817	-0.0080 ± 0.0754 ± 0.0038	-0.0080 ± 0.0754 ± 0.0038
		0.24 – 0.40	2.22	0.088	0.485	0.473	0.319	0.789	-0.1350 ± 0.0881 ± 0.0141	-0.1350 ± 0.0881 ± 0.0141
		0.40 – 0.57	2.34	0.088	0.515	0.474	0.477	0.759	0.0936 ± 0.1097 ± 0.0191	0.0936 ± 0.1097 ± 0.0191
		0.57 – 2.00	2.45	0.088	0.538	0.472	0.773	0.731	0.0698 ± 0.0774 ± 0.0310	0.0698 ± 0.0774 ± 0.0310
	0.52 – 0.70	0.00 – 0.24	1.89	0.089	0.410	0.592	0.156	0.856	0.0550 ± 0.0745 ± 0.0210	0.0550 ± 0.0745 ± 0.0210
		0.24 – 0.40	1.95	0.089	0.427	0.593	0.320	0.839	0.1667 ± 0.0746 ± 0.0065	0.1667 ± 0.0746 ± 0.0065
		0.40 – 0.57	2.05	0.088	0.450	0.594	0.481	0.817	0.1096 ± 0.1093 ± 0.0111	0.1096 ± 0.1093 ± 0.0111
		0.57 – 2.00	2.24	0.088	0.494	0.598	0.781	0.772	-0.1204 ± 0.0812 ± 0.0140	-0.1204 ± 0.0812 ± 0.0140
0.107 – 0.157	0.20 – 0.34	0.00 – 0.24	3.97	0.128	0.600	0.295	0.156	0.677	0.1632 ± 0.1000 ± 0.0076	0.1632 ± 0.1000 ± 0.0076
		0.24 – 0.40	4.13	0.129	0.622	0.288	0.321	0.648	0.0504 ± 0.1117 ± 0.0240	0.0504 ± 0.1117 ± 0.0240
		0.40 – 0.57	4.27	0.128	0.644	0.283	0.481	0.617	0.1457 ± 0.0965 ± 0.0127	0.1457 ± 0.0965 ± 0.0127
		0.57 – 2.00	4.24	0.127	0.646	0.288	0.719	0.613	0.0107 ± 0.0853 ± 0.0242	0.0107 ± 0.0853 ± 0.0242
	0.34 – 0.43	0.00 – 0.24	3.38	0.130	0.504	0.387	0.152	0.780	0.1394 ± 0.0675 ± 0.0103	0.1394 ± 0.0675 ± 0.0103
		0.24 – 0.40	3.48	0.129	0.523	0.388	0.316	0.759	-0.0400 ± 0.0771 ± 0.0324	-0.0400 ± 0.0771 ± 0.0324
		0.40 – 0.57	3.69	0.128	0.555	0.386	0.477	0.722	0.1165 ± 0.0891 ± 0.0207	0.1165 ± 0.0891 ± 0.0207
		0.57 – 2.00	3.71	0.127	0.563	0.385	0.754	0.712	-0.1150 ± 0.0845 ± 0.0066	-0.1150 ± 0.0845 ± 0.0066
	0.43 – 0.52	0.00 – 0.24	3.06	0.129	0.457	0.474	0.156	0.820	-0.0935 ± 0.0706 ± 0.0069	-0.0935 ± 0.0706 ± 0.0069
		0.24 – 0.40	3.14	0.130	0.469	0.475	0.317	0.807	0.0730 ± 0.0725 ± 0.0045	0.0730 ± 0.0725 ± 0.0045
		0.40 – 0.57	3.29	0.129	0.492	0.472	0.478	0.784	0.1433 ± 0.0922 ± 0.0076	0.1433 ± 0.0922 ± 0.0076
		0.57 – 2.00	3.45	0.128	0.524	0.473	0.771	0.747	0.0895 ± 0.0896 ± 0.0027	0.0895 ± 0.0896 ± 0.0027
	0.52 – 0.70	0.00 – 0.24	2.75	0.129	0.413	0.594	0.154	0.852	-0.0098 ± 0.0722 ± 0.0050	-0.0098 ± 0.0722 ± 0.0050
		0.24 – 0.40	2.77	0.129	0.415	0.594	0.320	0.848	0.0289 ± 0.0622 ± 0.0159	0.0289 ± 0.0622 ± 0.0159
		0.40 – 0.57	2.85	0.130	0.425	0.602	0.479	0.840	0.0286 ± 0.0769 ± 0.0048	0.0286 ± 0.0769 ± 0.0048
		0.57 – 2.00	3.17	0.129	0.476	0.602	0.769	0.788	0.0658 ± 0.0737 ± 0.0177	0.0658 ± 0.0737 ± 0.0177
0.157 – 0.600	0.20 – 0.34	0.00 – 0.24	6.65	0.229	0.566	0.301	0.155	0.717	0.0013 ± 0.0768 ± 0.0097	0.0013 ± 0.0768 ± 0.0097
		0.24 – 0.40	6.49	0.219	0.579	0.298	0.317	0.703	0.1688 ± 0.0823 ± 0.0186	0.1688 ± 0.0823 ± 0.0186
		0.40 – 0.57	6.54	0.211	0.608	0.290	0.476	0.664	0.0430 ± 0.0955 ± 0.0094	0.0430 ± 0.0955 ± 0.0094
		0.57 – 2.00	6.59	0.216	0.597	0.292	0.719	0.678	-0.1543 ± 0.1519 ± 0.0200	-0.1543 ± 0.1519 ± 0.0200
	0.34 – 0.43	0.00 – 0.24	5.84	0.231	0.492	0.386	0.154	0.793	0.1899 ± 0.0593 ± 0.0068	0.1899 ± 0.0593 ± 0.0068
		0.24 – 0.40	5.96	0.233	0.499	0.387	0.315	0.786	-0.0049 ± 0.0588 ± 0.0006	-0.0049 ± 0.0588 ± 0.0006
		0.40 – 0.57	5.97	0.230	0.509	0.389	0.473	0.774	-0.0331 ± 0.0781 ± 0.0019	-0.0331 ± 0.0781 ± 0.0019
		0.57 – 2.00	6.10	0.235	0.511	0.386	0.764	0.771	0.0785 ± 0.1060 ± 0.0350	0.0785 ± 0.1060 ± 0.0350
	0.43 – 0.52	0.00 – 0.24	5.22	0.228	0.444	0.474	0.153	0.833	0.0405 ± 0.0631 ± 0.0087	0.0405 ± 0.0631 ± 0.0087
		0.24 – 0.40	5.38	0.234	0.450	0.473	0.316	0.826	0.0549 ± 0.0614 ± 0.0290	0.0549 ± 0.0614 ± 0.0290
		0.40 – 0.57	5.47	0.234	0.458	0.476	0.476	0.818	-0.0151 ± 0.0755 ± 0.0006	-0.0151 ± 0.0755 ± 0.0006
		0.57 – 2.00	5.60	0.237	0.467	0.476	0.756	0.805	0.1480 ± 0.1033 ± 0.0136	0.1480 ± 0.1033 ± 0.0136
	0.52 – 0.70	0.00 – 0.24	4.95	0.223	0.426	0.593	0.156	0.844	-0.0112 ± 0.0658 ± 0.0073	-0.0112 ± 0.0658 ± 0.0073
		0.24 – 0.40	4.89	0.229	0.411	0.594	0.319	0.855	-0.0285 ± 0.0621 ± 0.0062	-0.0285 ± 0.0621 ± 0.0062
		0.40 – 0.57	4.88	0.231	0.411	0.599	0.479	0.853	-0.0536 ± 0.0704 ± 0.0078	-0.0536 ± 0.0704 ± 0.0078
		0.57 – 2.00	5.07	0.233	0.427	0.604	0.749	0.837	0.0404 ± 0.0778 ± 0.0087	0.0404 ± 0.0778 ± 0.0087

Table 25. Three-dimensionally binned SFA and CSA amplitudes of the $\sin(\phi - \phi_S)$ modulation for p as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

5.3 Pretzelosity asymmetry

Kinematic bin		Average kinematics						π^+	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(3\phi - \phi_S)/\epsilon \rangle_{U\perp}$	$2\langle \sin(3\phi - \phi_S) \rangle_{U\perp}$
x	0.023 – 0.046	1.29	0.036	0.702	0.336	0.486	0.526	-0.0095 ± 0.0103 ± 0.0015	-0.0037 ± 0.0061 ± 0.0007
	0.046 – 0.067	1.64	0.056	0.567	0.356	0.408	0.700	-0.0111 ± 0.0073 ± 0.0032	-0.0094 ± 0.0054 ± 0.0022
	0.067 – 0.082	1.98	0.074	0.516	0.366	0.375	0.752	-0.0037 ± 0.0089 ± 0.0024	-0.0024 ± 0.0070 ± 0.0017
	0.082 – 0.105	2.34	0.093	0.489	0.374	0.358	0.778	-0.0015 ± 0.0081 ± 0.0015	-0.0023 ± 0.0064 ± 0.0014
	0.082 – 0.105	2.34	0.093	0.489	0.374	0.358	0.778	-0.0015 ± 0.0081 ± 0.0015	-0.0023 ± 0.0064 ± 0.0014
	0.105 – 0.134	2.87	0.118	0.469	0.379	0.348	0.796	0.0037 ± 0.0088 ± 0.0022	0.0021 ± 0.0070 ± 0.0018
	0.134 – 0.186	3.69	0.157	0.456	0.379	0.342	0.811	-0.0015 ± 0.0091 ± 0.0006	-0.0002 ± 0.0073 ± 0.0006
	0.186 – 0.600	5.71	0.254	0.437	0.375	0.343	0.832	0.0049 ± 0.0103 ± 0.0013	0.0045 ± 0.0083 ± 0.0014
z	0.200 – 0.260	2.44	0.087	0.594	0.229	0.344	0.661	-0.0046 ± 0.0068 ± 0.0024	-0.0044 ± 0.0048 ± 0.0020
	0.260 – 0.320	2.46	0.094	0.556	0.289	0.371	0.702	0.0000 ± 0.0071 ± 0.0033	0.0016 ± 0.0052 ± 0.0023
	0.320 – 0.380	2.45	0.098	0.533	0.349	0.394	0.725	0.0006 ± 0.0078 ± 0.0017	-0.0010 ± 0.0059 ± 0.0012
	0.380 – 0.450	2.45	0.100	0.520	0.413	0.418	0.740	-0.0007 ± 0.0083 ± 0.0016	-0.0017 ± 0.0064 ± 0.0011
	0.450 – 0.520	2.44	0.101	0.508	0.483	0.441	0.753	0.0008 ± 0.0096 ± 0.0014	-0.0011 ± 0.0075 ± 0.0005
	0.450 – 0.520	2.44	0.101	0.508	0.483	0.441	0.753	0.0008 ± 0.0096 ± 0.0014	-0.0011 ± 0.0075 ± 0.0005
	0.520 – 0.600	2.43	0.102	0.499	0.558	0.460	0.763	-0.0087 ± 0.0105 ± 0.0021	-0.0066 ± 0.0083 ± 0.0009
	0.600 – 0.700	2.41	0.104	0.481	0.647	0.466	0.785	0.0142 ± 0.0110 ± 0.0017	0.0139 ± 0.0089 ± 0.0000
	0.700 – 0.760	2.41	0.107	0.457	0.729	0.453	0.813	-0.0080 ± 0.0164 ± 0.0033	-0.0036 ± 0.0136 ± 0.0017
	0.760 – 0.840	2.35	0.108	0.434	0.798	0.433	0.837	-0.0304 ± 0.0160 ± 0.0022	-0.0245 ± 0.0136 ± 0.0008
	0.840 – 1.200	2.31	0.116	0.394	0.916	0.376	0.872	-0.0205 ± 0.0141 ± 0.0031	-0.0155 ± 0.0123 ± 0.0019
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.56	0.110	0.460	0.341	0.110	0.813	-0.0022 ± 0.0071 ± 0.0026	-0.0022 ± 0.0059 ± 0.0020
	0.170 – 0.250	2.56	0.108	0.489	0.350	0.211	0.779	-0.0054 ± 0.0078 ± 0.0024	-0.0059 ± 0.0063 ± 0.0021
	0.250 – 0.310	2.52	0.103	0.514	0.354	0.280	0.750	-0.0001 ± 0.0091 ± 0.0061	-0.0022 ± 0.0072 ± 0.0042
	0.310 – 0.380	2.46	0.097	0.540	0.355	0.345	0.721	0.0055 ± 0.0088 ± 0.0023	0.0035 ± 0.0068 ± 0.0009
	0.310 – 0.380	2.46	0.097	0.540	0.355	0.345	0.721	0.0055 ± 0.0088 ± 0.0023	0.0035 ± 0.0068 ± 0.0009
	0.380 – 0.520	2.39	0.090	0.570	0.356	0.446	0.686	0.0002 ± 0.0071 ± 0.0015	-0.0003 ± 0.0052 ± 0.0002
	0.520 – 0.690	2.34	0.084	0.601	0.373	0.594	0.648	0.0064 ± 0.0090 ± 0.0019	0.0036 ± 0.0062 ± 0.0006
	0.690 – 2.000	2.30	0.076	0.642	0.429	0.849	0.597	0.0049 ± 0.0121 ± 0.0043	0.0033 ± 0.0078 ± 0.0002

Table 26. One-dimensionally binned SFA and CSA amplitudes of the $\sin(3\phi - \phi_S)$ modulation for π^+ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin		Average kinematics						π^0	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(3\phi - \phi_S)/\epsilon \rangle_{U\perp}$	$2\langle \sin(3\phi - \phi_S) \rangle_{U\perp}$
x	0.023 – 0.046	1.30	0.036	0.712	0.325	0.492	0.512	-0.0203 ± 0.0297 ± 0.0136	-0.0084 ± 0.0181 ± 0.0121
	0.046 – 0.067	1.72	0.056	0.597	0.352	0.406	0.665	-0.0388 ± 0.0222 ± 0.0133	-0.0250 ± 0.0163 ± 0.0121
	0.067 – 0.082	2.14	0.074	0.558	0.366	0.374	0.708	0.0073 ± 0.0275 ± 0.0139	0.0058 ± 0.0210 ± 0.0125
	0.082 – 0.105	2.58	0.093	0.538	0.372	0.353	0.731	-0.0016 ± 0.0251 ± 0.0135	0.0029 ± 0.0194 ± 0.0125
	0.082 – 0.105	2.58	0.093	0.538	0.372	0.353	0.731	-0.0016 ± 0.0251 ± 0.0135	0.0029 ± 0.0194 ± 0.0125
	0.105 – 0.134	3.19	0.118	0.522	0.378	0.338	0.749	-0.0271 ± 0.0280 ± 0.0142	-0.0156 ± 0.0216 ± 0.0129
	0.134 – 0.186	4.10	0.156	0.507	0.380	0.323	0.766	-0.0206 ± 0.0273 ± 0.0130	-0.0161 ± 0.0212 ± 0.0120
	0.186 – 0.600	6.14	0.249	0.479	0.386	0.326	0.797	0.0317 ± 0.0316 ± 0.0129	0.0278 ± 0.0249 ± 0.0120
z	0.200 – 0.260	2.45	0.078	0.648	0.229	0.337	0.598	-0.0118 ± 0.0330 ± 0.0113	-0.0019 ± 0.0207 ± 0.0094
	0.260 – 0.320	2.49	0.085	0.609	0.289	0.372	0.645	-0.0132 ± 0.0261 ± 0.0110	-0.0058 ± 0.0178 ± 0.0091
	0.320 – 0.380	2.52	0.090	0.581	0.348	0.401	0.679	-0.0192 ± 0.0247 ± 0.0111	-0.0136 ± 0.0175 ± 0.0092
	0.380 – 0.450	2.53	0.095	0.558	0.413	0.427	0.705	-0.0060 ± 0.0219 ± 0.0113	-0.0043 ± 0.0163 ± 0.0092
	0.450 – 0.520	2.55	0.099	0.537	0.483	0.450	0.728	0.0160 ± 0.0227 ± 0.0118	0.0137 ± 0.0173 ± 0.0095
	0.450 – 0.520	2.55	0.099	0.537	0.483	0.450	0.728	0.0160 ± 0.0227 ± 0.0118	0.0137 ± 0.0173 ± 0.0095
	0.520 – 0.600	2.57	0.102	0.517	0.557	0.469	0.750	-0.0143 ± 0.0228 ± 0.0109	-0.0089 ± 0.0180 ± 0.0091
	0.600 – 0.700	2.59	0.106	0.496	0.645	0.483	0.774	-0.0080 ± 0.0238 ± 0.0107	-0.0042 ± 0.0193 ± 0.0090
	0.700 – 0.760	2.61	0.112	0.472	0.728	0.494	0.799	0.0859 ± 0.0362 ± 0.0107	0.0756 ± 0.0299 ± 0.0090
	0.760 – 0.840	2.66	0.116	0.457	0.796	0.488	0.815	0.0323 ± 0.0386 ± 0.0115	0.0351 ± 0.0324 ± 0.0103
	0.840 – 1.200	2.56	0.121	0.418	0.908	0.478	0.849	-0.0620 ± 0.0419 ± 0.0111	-0.0482 ± 0.0359 ± 0.0097
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.82	0.114	0.481	0.338	0.111	0.799	-0.0294 ± 0.0259 ± 0.0060	-0.0229 ± 0.0216 ± 0.0049
	0.170 – 0.250	2.69	0.103	0.529	0.340	0.211	0.745	0.0017 ± 0.0259 ± 0.0060	0.0041 ± 0.0212 ± 0.0052
	0.250 – 0.310	2.59	0.095	0.563	0.343	0.280	0.705	-0.0016 ± 0.0290 ± 0.0065	0.0062 ± 0.0232 ± 0.0057
	0.310 – 0.380	2.49	0.088	0.591	0.347	0.345	0.668	-0.0302 ± 0.0272 ± 0.0064	-0.0223 ± 0.0210 ± 0.0051
	0.310 – 0.380	2.49	0.088	0.591	0.347	0.345	0.668	-0.0302 ± 0.0272 ± 0.0064	-0.0223 ± 0.0210 ± 0.0051
	0.380 – 0.520	2.39	0.081	0.624	0.353	0.446	0.625	-0.0005 ± 0.0205 ± 0.0063	-0.0043 ± 0.0150 ± 0.0051
	0.520 – 0.690	2.30	0.074	0.652	0.371	0.595	0.587	-0.0107 ± 0.0232 ± 0.0056	-0.0072 ± 0.0162 ± 0.0047
	0.690 – 2.000	2.27	0.071	0.675	0.428	0.849	0.554	-0.0161 ± 0.0264 ± 0.0056	0.0003 ± 0.0170 ± 0.0047

Table 27. One-dimensionally binned SFA and CSA amplitudes of the $\sin(3\phi - \phi_S)$ modulation for π^0 as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin		Average kinematics						π^-	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(3\phi - \phi_S)/\epsilon \rangle_{U\perp}$	$2\langle \sin(3\phi - \phi_S) \rangle_{U\perp}$
x	0.023 – 0.046	1.29	0.036	0.704	0.330	0.481	0.524	-0.0006 ± 0.0114 ± 0.0004	0.0011 ± 0.0068 ± 0.0001
	0.046 – 0.067	1.64	0.056	0.568	0.350	0.402	0.699	0.0125 ± 0.0084 ± 0.0006	0.0113 ± 0.0062 ± 0.0004
	0.067 – 0.082	1.98	0.074	0.515	0.359	0.369	0.752	0.0020 ± 0.0103 ± 0.0015	0.0045 ± 0.0081 ± 0.0008
	0.082 – 0.105	2.33	0.093	0.487	0.366	0.354	0.779	-0.0087 ± 0.0095 ± 0.0010	-0.0081 ± 0.0076 ± 0.0006
	0.082 – 0.105	2.33	0.093	0.487	0.366	0.354	0.779	-0.0087 ± 0.0095 ± 0.0010	-0.0081 ± 0.0076 ± 0.0006
	0.105 – 0.134	2.86	0.118	0.468	0.369	0.348	0.797	-0.0063 ± 0.0106 ± 0.0008	-0.0040 ± 0.0084 ± 0.0010
	0.134 – 0.186	3.66	0.156	0.454	0.369	0.342	0.813	-0.0104 ± 0.0112 ± 0.0000	-0.0100 ± 0.0089 ± 0.0003
	0.186 – 0.600	5.66	0.253	0.434	0.364	0.349	0.835	-0.0118 ± 0.0131 ± 0.0016	-0.0092 ± 0.0105 ± 0.0009
z	0.200 – 0.260	2.39	0.084	0.598	0.229	0.350	0.656	0.0084 ± 0.0077 ± 0.0011	0.0040 ± 0.0054 ± 0.0004
	0.260 – 0.320	2.38	0.091	0.559	0.289	0.379	0.698	-0.0042 ± 0.0082 ± 0.0008	0.0000 ± 0.0060 ± 0.0003
	0.320 – 0.380	2.36	0.094	0.536	0.348	0.403	0.721	-0.0016 ± 0.0092 ± 0.0008	0.0044 ± 0.0070 ± 0.0008
	0.380 – 0.450	2.37	0.097	0.521	0.413	0.422	0.738	-0.0062 ± 0.0099 ± 0.0013	-0.0017 ± 0.0077 ± 0.0001
	0.450 – 0.520	2.35	0.098	0.509	0.483	0.437	0.751	-0.0089 ± 0.0117 ± 0.0004	-0.0066 ± 0.0092 ± 0.0011
	0.450 – 0.520	2.35	0.098	0.509	0.483	0.437	0.751	-0.0089 ± 0.0117 ± 0.0004	-0.0066 ± 0.0092 ± 0.0011
	0.520 – 0.600	2.31	0.098	0.498	0.558	0.449	0.764	-0.0106 ± 0.0129 ± 0.0010	-0.0092 ± 0.0102 ± 0.0015
	0.600 – 0.700	2.27	0.099	0.479	0.646	0.438	0.787	-0.0086 ± 0.0139 ± 0.0011	-0.0050 ± 0.0113 ± 0.0009
	0.700 – 0.760	2.19	0.099	0.452	0.729	0.416	0.818	-0.0067 ± 0.0210 ± 0.0035	-0.0043 ± 0.0175 ± 0.0028
	0.760 – 0.840	2.15	0.101	0.432	0.798	0.389	0.839	0.0041 ± 0.0203 ± 0.0038	0.0057 ± 0.0172 ± 0.0032
	0.840 – 1.200	2.08	0.104	0.399	0.906	0.338	0.868	-0.0087 ± 0.0191 ± 0.0039	-0.0076 ± 0.0166 ± 0.0035
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.48	0.107	0.462	0.337	0.110	0.811	-0.0047 ± 0.0084 ± 0.0001	-0.0030 ± 0.0069 ± 0.0004
	0.170 – 0.250	2.47	0.103	0.492	0.345	0.211	0.775	0.0029 ± 0.0092 ± 0.0023	0.0016 ± 0.0074 ± 0.0025
	0.250 – 0.310	2.43	0.098	0.520	0.350	0.280	0.743	0.0084 ± 0.0108 ± 0.0044	0.0098 ± 0.0085 ± 0.0025
	0.310 – 0.380	2.36	0.092	0.546	0.349	0.345	0.714	-0.0044 ± 0.0105 ± 0.0027	-0.0012 ± 0.0080 ± 0.0001
	0.310 – 0.380	2.36	0.092	0.546	0.349	0.345	0.714	-0.0044 ± 0.0105 ± 0.0027	-0.0012 ± 0.0080 ± 0.0001
	0.380 – 0.520	2.30	0.086	0.576	0.347	0.446	0.678	-0.0109 ± 0.0085 ± 0.0004	-0.0068 ± 0.0062 ± 0.0020
	0.520 – 0.690	2.28	0.081	0.606	0.359	0.594	0.640	0.0016 ± 0.0107 ± 0.0016	0.0061 ± 0.0073 ± 0.0010
	0.690 – 2.000	2.26	0.076	0.643	0.409	0.846	0.594	-0.0036 ± 0.0145 ± 0.0102	-0.0012 ± 0.0092 ± 0.0039

Table 28. One-dimensionally binned SFA and CSA amplitudes of the $\sin(3\phi - \phi_S)$ modulation for π^- as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin		Average kinematics						K^+	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(3\phi - \phi_S)/\epsilon \rangle_{U\perp}$	$2\langle \sin(3\phi - \phi_S) \rangle_{U\perp}$
x	0.023 – 0.046	1.29	0.036	0.704	0.363	0.527	0.524	0.0354 ± 0.0275 ± 0.0125	0.0240 ± 0.0162 ± 0.0062
	0.046 – 0.067	1.65	0.056	0.571	0.384	0.436	0.696	-0.0144 ± 0.0193 ± 0.0105	-0.0078 ± 0.0143 ± 0.0076
	0.067 – 0.082	2.01	0.074	0.524	0.392	0.398	0.743	0.0060 ± 0.0236 ± 0.0196	0.0065 ± 0.0183 ± 0.0150
	0.082 – 0.105	2.39	0.093	0.498	0.401	0.378	0.769	-0.0358 ± 0.0209 ± 0.0158	-0.0274 ± 0.0164 ± 0.0119
	0.082 – 0.105	2.39	0.093	0.498	0.401	0.378	0.769	-0.0358 ± 0.0209 ± 0.0158	-0.0274 ± 0.0164 ± 0.0119
	0.105 – 0.134	2.93	0.118	0.479	0.404	0.366	0.788	0.0206 ± 0.0227 ± 0.0124	0.0170 ± 0.0180 ± 0.0085
	0.134 – 0.186	3.79	0.157	0.468	0.408	0.358	0.801	0.0020 ± 0.0232 ± 0.0116	-0.0011 ± 0.0184 ± 0.0087
	0.186 – 0.600	5.86	0.252	0.451	0.410	0.357	0.822	-0.0451 ± 0.0253 ± 0.0001	-0.0336 ± 0.0202 ± 0.0011
z	0.200 – 0.260	2.46	0.085	0.603	0.228	0.351	0.652	0.0030 ± 0.0222 ± 0.0092	0.0117 ± 0.0151 ± 0.0055
	0.260 – 0.320	2.49	0.092	0.569	0.287	0.378	0.688	-0.0191 ± 0.0204 ± 0.0077	-0.0132 ± 0.0147 ± 0.0042
	0.320 – 0.380	2.53	0.097	0.548	0.347	0.403	0.711	-0.0079 ± 0.0202 ± 0.0057	-0.0056 ± 0.0150 ± 0.0024
	0.380 – 0.450	2.56	0.101	0.532	0.412	0.425	0.730	0.0305 ± 0.0199 ± 0.0039	0.0241 ± 0.0154 ± 0.0018
	0.450 – 0.520	2.55	0.102	0.522	0.482	0.458	0.739	0.0114 ± 0.0220 ± 0.0035	0.0091 ± 0.0172 ± 0.0018
	0.450 – 0.520	2.55	0.102	0.522	0.482	0.458	0.739	0.0114 ± 0.0220 ± 0.0035	0.0091 ± 0.0172 ± 0.0018
	0.520 – 0.600	2.54	0.104	0.515	0.556	0.484	0.748	0.0027 ± 0.0233 ± 0.0029	0.0030 ± 0.0184 ± 0.0013
	0.600 – 0.700	2.61	0.108	0.500	0.645	0.506	0.766	-0.0008 ± 0.0249 ± 0.0004	-0.0040 ± 0.0198 ± 0.0007
	0.700 – 0.760	2.63	0.112	0.474	0.727	0.506	0.797	-0.0111 ± 0.0374 ± 0.0022	-0.0048 ± 0.0305 ± 0.0005
	0.760 – 0.840	2.62	0.116	0.448	0.796	0.501	0.825	0.0038 ± 0.0356 ± 0.0006	0.0046 ± 0.0297 ± 0.0004
	0.840 – 1.200	2.47	0.119	0.411	0.903	0.469	0.858	0.0297 ± 0.0372 ± 0.0091	0.0262 ± 0.0320 ± 0.0087
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.68	0.113	0.468	0.362	0.111	0.807	-0.0037 ± 0.0188 ± 0.0036	-0.0012 ± 0.0153 ± 0.0018
	0.170 – 0.250	2.66	0.109	0.495	0.372	0.211	0.775	-0.0044 ± 0.0209 ± 0.0031	-0.0031 ± 0.0167 ± 0.0012
	0.250 – 0.310	2.66	0.106	0.517	0.377	0.280	0.750	0.0130 ± 0.0247 ± 0.0010	0.0110 ± 0.0193 ± 0.0015
	0.310 – 0.380	2.56	0.099	0.540	0.381	0.345	0.723	0.0247 ± 0.0241 ± 0.0003	0.0211 ± 0.0184 ± 0.0008
	0.310 – 0.380	2.56	0.099	0.540	0.381	0.345	0.723	0.0247 ± 0.0241 ± 0.0003	0.0211 ± 0.0184 ± 0.0008
	0.380 – 0.520	2.49	0.093	0.565	0.387	0.447	0.692	-0.0015 ± 0.0190 ± 0.0085	0.0023 ± 0.0139 ± 0.0073
	0.520 – 0.690	2.41	0.087	0.593	0.402	0.597	0.658	0.0005 ± 0.0223 ± 0.0096	0.0056 ± 0.0156 ± 0.0094
	0.690 – 2.000	2.29	0.076	0.642	0.451	0.867	0.597	0.0011 ± 0.0266 ± 0.0043	-0.0073 ± 0.0172 ± 0.0012

Table 29. One-dimensionally binned SFA and CSA amplitudes of the $\sin(3\phi - \phi_S)$ modulation for K^+ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin		Average kinematics						K^-	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(3\phi - \phi_S)/\epsilon \rangle_{U\perp}$	$2\langle \sin(3\phi - \phi_S) \rangle_{U\perp}$
x	0.023 – 0.046	1.30	0.036	0.711	0.338	0.503	0.513	0.0332 ± 0.0372 ± 0.0071	0.0176 ± 0.0213 ± 0.0028
	0.046 – 0.067	1.67	0.056	0.578	0.355	0.417	0.687	0.0585 ± 0.0285 ± 0.0131	0.0486 ± 0.0207 ± 0.0076
	0.067 – 0.082	2.04	0.074	0.533	0.361	0.381	0.734	-0.0473 ± 0.0358 ± 0.0145	-0.0347 ± 0.0273 ± 0.0085
	0.082 – 0.105	2.44	0.093	0.510	0.367	0.367	0.758	-0.0211 ± 0.0338 ± 0.0121	-0.0177 ± 0.0260 ± 0.0084
	0.082 – 0.105	2.44	0.093	0.510	0.367	0.367	0.758	-0.0211 ± 0.0338 ± 0.0121	-0.0177 ± 0.0260 ± 0.0084
	0.105 – 0.134	3.01	0.118	0.493	0.366	0.362	0.775	0.0430 ± 0.0379 ± 0.0102	0.0286 ± 0.0296 ± 0.0060
	0.134 – 0.186	3.89	0.157	0.480	0.365	0.356	0.790	0.0219 ± 0.0392 ± 0.0005	0.0159 ± 0.0307 ± 0.0015
	0.186 – 0.600	5.82	0.251	0.451	0.363	0.364	0.821	-0.0127 ± 0.0457 ± 0.0043	-0.0067 ± 0.0362 ± 0.0008
z	0.200 – 0.260	2.41	0.082	0.616	0.227	0.362	0.636	0.0456 ± 0.0292 ± 0.0093	0.0279 ± 0.0195 ± 0.0028
	0.260 – 0.320	2.41	0.087	0.582	0.287	0.389	0.673	0.0260 ± 0.0290 ± 0.0111	0.0207 ± 0.0206 ± 0.0047
	0.320 – 0.380	2.40	0.091	0.557	0.347	0.419	0.701	-0.0020 ± 0.0307 ± 0.0072	-0.0011 ± 0.0227 ± 0.0029
	0.380 – 0.450	2.37	0.092	0.542	0.411	0.440	0.718	-0.0286 ± 0.0324 ± 0.0135	-0.0146 ± 0.0247 ± 0.0084
	0.450 – 0.520	2.29	0.091	0.534	0.482	0.460	0.726	-0.0081 ± 0.0374 ± 0.0119	-0.0024 ± 0.0289 ± 0.0084
	0.450 – 0.520	2.29	0.091	0.534	0.482	0.460	0.726	-0.0081 ± 0.0374 ± 0.0119	-0.0024 ± 0.0289 ± 0.0084
	0.520 – 0.600	2.34	0.093	0.531	0.556	0.465	0.729	0.0889 ± 0.0433 ± 0.0086	0.0814 ± 0.0335 ± 0.0063
	0.600 – 0.700	2.33	0.094	0.520	0.642	0.493	0.744	-0.1234 ± 0.0519 ± 0.0061	-0.1003 ± 0.0406 ± 0.0043
	0.700 – 0.760	2.28	0.093	0.506	0.726	0.500	0.766	0.0195 ± 0.0980 ± 0.0066	0.0189 ± 0.0782 ± 0.0050
	0.760 – 0.840	2.30	0.096	0.482	0.793	0.464	0.795	0.0640 ± 0.1308 ± 0.0005	0.0393 ± 0.1078 ± 0.0011
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.47	0.103	0.477	0.337	0.111	0.797	-0.0164 ± 0.0293 ± 0.0028	-0.0165 ± 0.0237 ± 0.0022
	0.170 – 0.250	2.48	0.100	0.513	0.346	0.210	0.756	0.0373 ± 0.0331 ± 0.0039	0.0275 ± 0.0262 ± 0.0016
	0.250 – 0.310	2.48	0.096	0.540	0.346	0.280	0.724	0.0224 ± 0.0393 ± 0.0110	0.0089 ± 0.0301 ± 0.0064
	0.310 – 0.380	2.39	0.089	0.566	0.351	0.345	0.692	-0.0460 ± 0.0381 ± 0.0168	-0.0314 ± 0.0283 ± 0.0097
	0.310 – 0.380	2.39	0.089	0.566	0.351	0.345	0.692	-0.0460 ± 0.0381 ± 0.0168	-0.0314 ± 0.0283 ± 0.0097
	0.380 – 0.520	2.32	0.084	0.592	0.348	0.447	0.661	0.0201 ± 0.0303 ± 0.0228	0.0162 ± 0.0214 ± 0.0131
	0.520 – 0.690	2.31	0.080	0.620	0.358	0.597	0.625	0.0166 ± 0.0358 ± 0.0223	0.0076 ± 0.0239 ± 0.0113
	0.690 – 2.000	2.26	0.073	0.661	0.409	0.856	0.572	0.0093 ± 0.0432 ± 0.0152	0.0250 ± 0.0266 ± 0.0064

Table 30. One-dimensionally binned SFA and CSA amplitudes of the $\sin(3\phi - \phi_S)$ modulation for K^- as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin		Average kinematics						p	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(3\phi - \phi_S)/\epsilon \rangle_{U\perp}$	$2\langle \sin(3\phi - \phi_S) \rangle_{U\perp}$
x	0.023 – 0.040	1.24	0.033	0.738	0.354	0.550	0.475	-0.0137 ± 0.0397 ± 0.0009	-0.0162 ± 0.0219 ± 0.0011
	0.040 – 0.057	1.54	0.048	0.619	0.395	0.490	0.640	0.0277 ± 0.0263 ± 0.0020	0.0208 ± 0.0181 ± 0.0001
	0.057 – 0.075	1.90	0.066	0.561	0.424	0.447	0.706	0.0193 ± 0.0254 ± 0.0017	0.0144 ± 0.0189 ± 0.0035
	0.075 – 0.098	2.36	0.086	0.533	0.439	0.430	0.735	-0.0049 ± 0.0250 ± 0.0025	-0.0047 ± 0.0193 ± 0.0050
	0.075 – 0.098	2.36	0.086	0.533	0.439	0.430	0.735	-0.0049 ± 0.0250 ± 0.0025	-0.0047 ± 0.0193 ± 0.0050
	0.098 – 0.136	3.06	0.115	0.514	0.449	0.406	0.757	-0.0359 ± 0.0239 ± 0.0026	-0.0219 ± 0.0185 ± 0.0015
	0.136 – 0.185	4.04	0.158	0.496	0.457	0.390	0.777	0.0328 ± 0.0285 ± 0.0040	0.0203 ± 0.0223 ± 0.0007
	0.185 – 0.600	6.13	0.257	0.464	0.471	0.383	0.811	0.0135 ± 0.0281 ± 0.0135	0.0129 ± 0.0225 ± 0.0101
z	0.200 – 0.270	2.30	0.062	0.739	0.239	0.477	0.477	-0.0366 ± 0.0432 ± 0.0022	-0.0214 ± 0.0229 ± 0.0010
	0.270 – 0.340	2.57	0.081	0.643	0.306	0.456	0.613	0.0233 ± 0.0264 ± 0.0029	0.0171 ± 0.0174 ± 0.0000
	0.340 – 0.410	2.64	0.093	0.583	0.375	0.443	0.683	0.0200 ± 0.0222 ± 0.0093	0.0184 ± 0.0164 ± 0.0047
	0.410 – 0.470	2.66	0.102	0.544	0.439	0.446	0.723	0.0011 ± 0.0234 ± 0.0143	0.0033 ± 0.0182 ± 0.0100
	0.470 – 0.530	2.68	0.109	0.512	0.499	0.435	0.757	-0.0066 ± 0.0246 ± 0.0110	-0.0028 ± 0.0196 ± 0.0072
	0.470 – 0.530	2.68	0.109	0.512	0.499	0.435	0.757	-0.0066 ± 0.0246 ± 0.0110	-0.0028 ± 0.0196 ± 0.0072
	0.530 – 0.610	2.64	0.113	0.485	0.567	0.452	0.781	0.0321 ± 0.0248 ± 0.0054	0.0204 ± 0.0200 ± 0.0028
	0.610 – 0.700	2.63	0.119	0.455	0.650	0.463	0.810	-0.0533 ± 0.0298 ± 0.0135	-0.0398 ± 0.0244 ± 0.0088
	0.700 – 0.780	2.57	0.123	0.423	0.735	0.477	0.841	-0.0394 ± 0.0432 ± 0.0137	-0.0303 ± 0.0364 ± 0.0091
	0.780 – 0.880	2.54	0.130	0.389	0.821	0.490	0.872	0.0050 ± 0.0624 ± 0.0035	0.0079 ± 0.0539 ± 0.0015
	0.880 – 1.200	2.45	0.136	0.353	0.938	0.505	0.900	-0.0374 ± 0.1035 ± 0.0002	-0.0283 ± 0.0917 ± 0.0053
$P_{h\perp}$ [GeV]	0.000 – 0.230	2.88	0.113	0.510	0.435	0.150	0.765	0.0107 ± 0.0200 ± 0.0021	0.0072 ± 0.0159 ± 0.0004
	0.230 – 0.340	2.76	0.106	0.543	0.427	0.286	0.723	0.0129 ± 0.0221 ± 0.0022	0.0110 ± 0.0172 ± 0.0020
	0.340 – 0.430	2.62	0.097	0.569	0.416	0.385	0.691	0.0193 ± 0.0257 ± 0.0023	0.0224 ± 0.0194 ± 0.0014
	0.430 – 0.520	2.54	0.091	0.590	0.413	0.474	0.666	-0.0123 ± 0.0286 ± 0.0015	-0.0025 ± 0.0208 ± 0.0033
	0.430 – 0.520	2.54	0.091	0.590	0.413	0.474	0.666	-0.0123 ± 0.0286 ± 0.0015	-0.0025 ± 0.0208 ± 0.0033
	0.520 – 0.620	2.44	0.085	0.608	0.406	0.568	0.644	-0.0005 ± 0.0310 ± 0.0061	0.0020 ± 0.0216 ± 0.0009
	0.620 – 0.740	2.35	0.080	0.620	0.405	0.676	0.628	-0.0022 ± 0.0349 ± 0.0113	-0.0071 ± 0.0237 ± 0.0055
	0.740 – 2.000	2.31	0.078	0.633	0.432	0.904	0.609	-0.0164 ± 0.0334 ± 0.0016	-0.0120 ± 0.0215 ± 0.0024

Table 31. One-dimensionally binned SFA and CSA amplitudes of the $\sin(3\phi - \phi_S)$ modulation for p as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin		Average kinematics						$\bar{p}$	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(3\phi - \phi_S)/\epsilon \rangle_{U\perp}$	$2\langle \sin(3\phi - \phi_S) \rangle_{U\perp}$
x	0.023 – 0.040	1.26	0.032	0.759	0.335	0.539	0.442	-0.0526 ± 0.0888 ± 0.0174	-0.0227 ± 0.0445 ± 0.0069
	0.040 – 0.057	1.65	0.048	0.666	0.360	0.492	0.579	0.0849 ± 0.0726 ± 0.0023	0.0365 ± 0.0443 ± 0.0028
	0.057 – 0.075	2.12	0.065	0.628	0.372	0.472	0.626	0.0263 ± 0.0806 ± 0.0051	-0.0184 ± 0.0519 ± 0.0003
	0.075 – 0.098	2.69	0.085	0.608	0.377	0.450	0.655	0.0177 ± 0.0840 ± 0.0039	0.0070 ± 0.0568 ± 0.0024
	0.075 – 0.098	2.69	0.085	0.608	0.377	0.450	0.655	0.0177 ± 0.0840 ± 0.0039	0.0070 ± 0.0568 ± 0.0024
	0.098 – 0.136	3.48	0.115	0.588	0.385	0.429	0.678	0.1875 ± 0.0866 ± 0.0156	0.1451 ± 0.0601 ± 0.0043
	0.136 – 0.185	4.58	0.158	0.562	0.385	0.399	0.712	-0.0308 ± 0.1099 ± 0.0032	0.0094 ± 0.0795 ± 0.0088
	0.185 – 0.600	6.60	0.243	0.531	0.406	0.383	0.748	-0.0018 ± 0.1170 ± 0.0072	0.0077 ± 0.0871 ± 0.0010
z	0.200 – 0.270	2.25	0.060	0.750	0.238	0.471	0.459	0.0643 ± 0.0888 ± 0.0083	0.0370 ± 0.0436 ± 0.0023
	0.270 – 0.340	2.48	0.074	0.679	0.304	0.476	0.562	-0.0535 ± 0.0661 ± 0.0197	-0.0468 ± 0.0396 ± 0.0076
	0.340 – 0.410	2.43	0.079	0.634	0.373	0.482	0.618	-0.0029 ± 0.0656 ± 0.0156	-0.0159 ± 0.0441 ± 0.0052
	0.410 – 0.470	2.43	0.085	0.595	0.437	0.470	0.665	0.1100 ± 0.0821 ± 0.0149	0.0594 ± 0.0592 ± 0.0036
	0.470 – 0.530	2.41	0.085	0.583	0.498	0.478	0.678	0.1653 ± 0.1027 ± 0.0115	0.1150 ± 0.0733 ± 0.0005
	0.470 – 0.530	2.41	0.085	0.583	0.498	0.478	0.678	0.1653 ± 0.1027 ± 0.0115	0.1150 ± 0.0733 ± 0.0005
	0.530 – 0.610	2.26	0.083	0.567	0.563	0.492	0.698	-0.0283 ± 0.1153 ± 0.0160	-0.0260 ± 0.0846 ± 0.0009
	0.610 – 0.700	2.40	0.095	0.527	0.645	0.502	0.745	0.2663 ± 0.1557 ± 0.0331	0.2163 ± 0.1219 ± 0.0178
$P_{h\perp}$ [GeV]	0.000 – 0.230	2.79	0.097	0.586	0.378	0.151	0.683	0.1058 ± 0.0729 ± 0.0157	0.0879 ± 0.0521 ± 0.0081
	0.230 – 0.340	2.53	0.083	0.630	0.364	0.288	0.622	-0.0116 ± 0.0811 ± 0.0048	-0.0154 ± 0.0568 ± 0.0115
	0.340 – 0.430	2.37	0.075	0.652	0.358	0.385	0.592	0.0745 ± 0.0898 ± 0.0298	0.0405 ± 0.0592 ± 0.0283
	0.430 – 0.520	2.35	0.073	0.667	0.351	0.475	0.572	0.0470 ± 0.0891 ± 0.0027	0.0471 ± 0.0559 ± 0.0073
	0.430 – 0.520	2.35	0.073	0.667	0.351	0.475	0.572	0.0470 ± 0.0891 ± 0.0027	0.0471 ± 0.0559 ± 0.0073
	0.520 – 0.620	2.30	0.070	0.678	0.355	0.569	0.557	0.0505 ± 0.0915 ± 0.0081	0.0126 ± 0.0562 ± 0.0060
	0.620 – 0.740	2.21	0.066	0.687	0.355	0.675	0.544	-0.0091 ± 0.0981 ± 0.0089	-0.0079 ± 0.0566 ± 0.0065
	0.740 – 2.000	2.12	0.062	0.698	0.386	0.886	0.527	0.0368 ± 0.1002 ± 0.0147	-0.0146 ± 0.0547 ± 0.0107

Table 32. One-dimensionally binned SFA and CSA amplitudes of the $\sin(3\phi - \phi_S)$ modulation for $\bar{p}$ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin			Average kinematics						π^+	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(3\phi - \phi_S)/\epsilon \rangle_{U\perp}$	$2\langle \sin(3\phi - \phi_S) \rangle_{U\perp}$
0.023 – 0.072	0.20 – 0.28	0.00 – 0.23	1.46	0.052	0.561	0.236	0.151	0.708	-0.0116 ± 0.0193 ± 0.0022	-0.0116 ± 0.0193 ± 0.0022
		0.23 – 0.36	1.51	0.048	0.632	0.235	0.298	0.619	-0.0012 ± 0.0207 ± 0.0023	-0.0012 ± 0.0207 ± 0.0023
		0.36 – 0.54	1.54	0.046	0.673	0.237	0.443	0.564	0.0166 ± 0.0165 ± 0.0002	0.0166 ± 0.0165 ± 0.0002
		0.54 – 2.00	1.59	0.043	0.730	0.242	0.655	0.483	-0.0193 ± 0.0268 ± 0.0071	-0.0193 ± 0.0268 ± 0.0071
	0.28 – 0.37	0.00 – 0.23	1.43	0.054	0.525	0.320	0.150	0.750	-0.0494 ± 0.0219 ± 0.0049	-0.0494 ± 0.0219 ± 0.0049
		0.23 – 0.36	1.48	0.050	0.595	0.320	0.297	0.665	-0.0111 ± 0.0315 ± 0.0009	-0.0111 ± 0.0315 ± 0.0009
		0.36 – 0.54	1.52	0.047	0.640	0.320	0.449	0.607	-0.0160 ± 0.0216 ± 0.0000	-0.0160 ± 0.0216 ± 0.0000
		0.54 – 2.00	1.56	0.045	0.692	0.323	0.699	0.536	-0.0126 ± 0.0217 ± 0.0057	-0.0126 ± 0.0217 ± 0.0057
	0.37 – 0.49	0.00 – 0.23	1.40	0.055	0.504	0.422	0.151	0.775	-0.0003 ± 0.0255 ± 0.0006	-0.0003 ± 0.0255 ± 0.0006
		0.23 – 0.36	1.45	0.051	0.563	0.422	0.298	0.705	-0.0369 ± 0.0332 ± 0.0010	-0.0369 ± 0.0332 ± 0.0010
		0.36 – 0.54	1.49	0.049	0.609	0.423	0.447	0.648	0.0233 ± 0.0317 ± 0.0020	0.0233 ± 0.0317 ± 0.0020
		0.54 – 2.00	1.54	0.046	0.668	0.425	0.747	0.569	0.0244 ± 0.0216 ± 0.0012	0.0244 ± 0.0216 ± 0.0012
	0.49 – 0.70	0.00 – 0.23	1.38	0.056	0.488	0.579	0.151	0.793	0.0065 ± 0.0288 ± 0.0048	0.0065 ± 0.0288 ± 0.0048
		0.23 – 0.36	1.41	0.053	0.529	0.578	0.298	0.745	-0.0109 ± 0.0314 ± 0.0063	-0.0109 ± 0.0314 ± 0.0063
		0.36 – 0.54	1.45	0.051	0.571	0.577	0.448	0.695	-0.0496 ± 0.0345 ± 0.0043	-0.0496 ± 0.0345 ± 0.0043
		0.54 – 2.00	1.51	0.048	0.633	0.577	0.786	0.618	-0.0144 ± 0.0248 ± 0.0019	-0.0144 ± 0.0248 ± 0.0019
0.072 – 0.098	0.20 – 0.28	0.00 – 0.23	2.10	0.084	0.484	0.239	0.140	0.792	-0.0282 ± 0.0217 ± 0.0020	-0.0282 ± 0.0217 ± 0.0020
		0.23 – 0.36	2.39	0.084	0.550	0.238	0.295	0.721	-0.0034 ± 0.0317 ± 0.0021	-0.0034 ± 0.0317 ± 0.0021
		0.36 – 0.54	2.47	0.084	0.572	0.239	0.441	0.692	0.0160 ± 0.0298 ± 0.0005	0.0160 ± 0.0298 ± 0.0005
		0.54 – 2.00	2.73	0.084	0.633	0.244	0.643	0.620	0.0343 ± 0.0544 ± 0.0054	0.0343 ± 0.0544 ± 0.0054
	0.28 – 0.37	0.00 – 0.23	1.89	0.084	0.434	0.321	0.142	0.834	0.0020 ± 0.0218 ± 0.0039	0.0020 ± 0.0218 ± 0.0039
		0.23 – 0.36	2.14	0.084	0.492	0.322	0.293	0.778	0.0153 ± 0.0322 ± 0.0025	0.0153 ± 0.0322 ± 0.0025
		0.36 – 0.54	2.30	0.084	0.530	0.321	0.444	0.736	0.0056 ± 0.0321 ± 0.0022	0.0056 ± 0.0321 ± 0.0022
		0.54 – 2.00	2.51	0.084	0.581	0.325	0.676	0.678	0.0199 ± 0.0398 ± 0.0095	0.0199 ± 0.0398 ± 0.0095
	0.37 – 0.49	0.00 – 0.23	1.83	0.085	0.420	0.423	0.146	0.846	-0.0046 ± 0.0249 ± 0.0004	-0.0046 ± 0.0249 ± 0.0004
		0.23 – 0.36	1.99	0.085	0.455	0.424	0.293	0.812	-0.0223 ± 0.0301 ± 0.0023	-0.0223 ± 0.0301 ± 0.0023
		0.36 – 0.54	2.18	0.084	0.502	0.425	0.443	0.766	-0.0838 ± 0.0365 ± 0.0030	-0.0838 ± 0.0365 ± 0.0030
		0.54 – 2.00	2.38	0.084	0.551	0.427	0.719	0.711	-0.0262 ± 0.0355 ± 0.0014	-0.0262 ± 0.0355 ± 0.0014
	0.49 – 0.70	0.00 – 0.23	1.78	0.085	0.407	0.578	0.148	0.857	0.0298 ± 0.0291 ± 0.0028	0.0298 ± 0.0291 ± 0.0028
		0.23 – 0.36	1.87	0.085	0.427	0.580	0.295	0.838	-0.0232 ± 0.0298 ± 0.0032	-0.0232 ± 0.0298 ± 0.0032
		0.36 – 0.54	2.02	0.084	0.463	0.583	0.443	0.806	0.0114 ± 0.0325 ± 0.0015	0.0114 ± 0.0325 ± 0.0015
		0.54 – 2.00	2.29	0.084	0.530	0.583	0.754	0.736	0.0219 ± 0.0342 ± 0.0157	0.0219 ± 0.0342 ± 0.0157
0.098 – 0.138	0.20 – 0.28	0.00 – 0.23	2.86	0.116	0.477	0.239	0.139	0.799	-0.0053 ± 0.0215 ± 0.0004	-0.0053 ± 0.0215 ± 0.0004
		0.23 – 0.36	3.18	0.116	0.532	0.239	0.292	0.742	0.0089 ± 0.0320 ± 0.0009	0.0089 ± 0.0320 ± 0.0009
		0.36 – 0.54	3.26	0.115	0.547	0.239	0.441	0.721	0.0206 ± 0.0354 ± 0.0016	0.0206 ± 0.0354 ± 0.0016
		0.54 – 2.00	3.53	0.115	0.593	0.244	0.638	0.670	0.0351 ± 0.0638 ± 0.0061	0.0351 ± 0.0638 ± 0.0061
	0.28 – 0.37	0.00 – 0.23	2.53	0.116	0.422	0.322	0.143	0.843	0.0186 ± 0.0218 ± 0.0009	0.0186 ± 0.0218 ± 0.0009
		0.23 – 0.36	2.81	0.116	0.469	0.323	0.291	0.799	-0.0259 ± 0.0297 ± 0.0049	-0.0259 ± 0.0297 ± 0.0049
		0.36 – 0.54	3.03	0.116	0.508	0.322	0.442	0.759	0.0318 ± 0.0346 ± 0.0020	0.0318 ± 0.0346 ± 0.0020
		0.54 – 2.00	3.21	0.115	0.539	0.325	0.672	0.725	-0.0272 ± 0.0459 ± 0.0163	-0.0272 ± 0.0459 ± 0.0163
	0.37 – 0.49	0.00 – 0.23	2.41	0.116	0.402	0.423	0.148	0.857	0.0183 ± 0.0253 ± 0.0025	0.0183 ± 0.0253 ± 0.0025
		0.23 – 0.36	2.51	0.116	0.418	0.426	0.293	0.841	-0.0055 ± 0.0278 ± 0.0014	-0.0055 ± 0.0278 ± 0.0014
		0.36 – 0.54	2.84	0.116	0.475	0.427	0.441	0.791	0.0310 ± 0.0336 ± 0.0012	0.0310 ± 0.0336 ± 0.0012
		0.54 – 2.00	3.11	0.116	0.521	0.427	0.716	0.741	-0.0403 ± 0.0398 ± 0.0043	-0.0403 ± 0.0398 ± 0.0043
	0.49 – 0.70	0.00 – 0.23	2.38	0.116	0.398	0.577	0.151	0.862	-0.0087 ± 0.0292 ± 0.0043	-0.0087 ± 0.0292 ± 0.0043
		0.23 – 0.36	2.40	0.116	0.400	0.579	0.296	0.858	-0.0087 ± 0.0295 ± 0.0033	-0.0087 ± 0.0295 ± 0.0033
		0.36 – 0.54	2.55	0.116	0.426	0.582	0.441	0.835	0.0036 ± 0.0293 ± 0.0024	0.0036 ± 0.0293 ± 0.0024
		0.54 – 2.00	2.98	0.115	0.500	0.584	0.742	0.765	0.0498 ± 0.0349 ± 0.0054	0.0498 ± 0.0349 ± 0.0054
0.138 – 0.600	0.20 – 0.28	0.00 – 0.23	4.95	0.205	0.467	0.239	0.141	0.811	-0.0045 ± 0.0194 ± 0.0036	-0.0045 ± 0.0194 ± 0.0036
		0.23 – 0.36	5.26	0.214	0.486	0.241	0.290	0.790	0.0202 ± 0.0274 ± 0.0017	0.0202 ± 0.0274 ± 0.0017
		0.36 – 0.54	5.21	0.207	0.497	0.240	0.440	0.776	-0.0615 ± 0.0371 ± 0.0093	-0.0615 ± 0.0371 ± 0.0093
		0.54 – 2.00	5.42	0.209	0.515	0.244	0.637	0.759	0.0865 ± 0.0788 ± 0.0074	0.0865 ± 0.0788 ± 0.0074
	0.28 – 0.37	0.00 – 0.23	4.48	0.201	0.428	0.321	0.147	0.841	0.0103 ± 0.0209 ± 0.0020	0.0103 ± 0.0209 ± 0.0020
		0.23 – 0.36	4.64	0.210	0.430	0.323	0.292	0.835	-0.0121 ± 0.0253 ± 0.0011	-0.0121 ± 0.0253 ± 0.0011
		0.36 – 0.54	4.89	0.211	0.457	0.324	0.439	0.810	0.0050 ± 0.0309 ± 0.0053	0.0050 ± 0.0309 ± 0.0053
		0.54 – 2.00	4.93	0.205	0.474	0.325	0.671	0.793	0.0095 ± 0.0517 ± 0.0032	0.0095 ± 0.0517 ± 0.0032
	0.37 – 0.49	0.00 – 0.23	4.38	0.201	0.419	0.422	0.150	0.847	0.0172 ± 0.0246 ± 0.0028	0.0172 ± 0.0246 ± 0.0028
		0.23 – 0.36	4.38	0.205	0.413	0.424	0.294	0.850	0.0015 ± 0.0264 ± 0.0030	0.0015 ± 0.0264 ± 0.0030
		0.36 – 0.54	4.65	0.210	0.432	0.427	0.438	0.832	-0.0073 ± 0.0286 ± 0.0049	-0.0073 ± 0.0286 ± 0.0049
		0.54 – 2.00	4.84	0.205	0.466	0.427	0.704	0.799	0.0359 ± 0.0394 ± 0.0002	0.0359 ± 0.0394 ± 0.0002
	0.49 – 0.70	0.00 – 0.23	4.33	0.200	0.414	0.575	0.153	0.852	-0.0320 ± 0.0297 ± 0.0012	-0.0320 ± 0.0297 ± 0.0012
		0.23 – 0.36	4.28	0.200	0.410	0.577	0.296	0.852	0.0159 ± 0.0294 ± 0.0014	0.0159 ± 0.0294 ± 0.0014
		0.36 – 0.54	4.41	0.206	0.413	0.580	0.444	0.848	0.0016 ± 0.0276 ± 0.0036	0.0016 ± 0.0276 ± 0.0036
		0.54 – 2.00	4.82	0.209	0.454	0.587	0.723	0.811	0.0250 ± 0.0313 ± 0.0064	0.0250 ± 0.0313 ± 0.0064

Table 33. Three-dimensionally binned SFA and CSA amplitudes of the $\sin(3\phi - \phi_S)$ modulation for π^+ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin			Average kinematics						π^-	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(3\phi - \phi_S)/\epsilon \rangle_{U\perp}$	$2\langle \sin(3\phi - \phi_S) \rangle_{U\perp}$
0.023 – 0.072	0.20 – 0.28	0.00 – 0.23	1.46	0.052	0.561	0.236	0.152	0.709	0.0449 ± 0.0219 ± 0.0050	0.0449 ± 0.0219 ± 0.0050
		0.23 – 0.36	1.51	0.047	0.636	0.234	0.298	0.613	-0.0126 ± 0.0234 ± 0.0014	-0.0126 ± 0.0234 ± 0.0014
		0.36 – 0.54	1.53	0.045	0.674	0.236	0.443	0.561	-0.0109 ± 0.0186 ± 0.0017	-0.0109 ± 0.0186 ± 0.0017
		0.54 – 2.00	1.58	0.043	0.729	0.241	0.658	0.483	-0.0005 ± 0.0292 ± 0.0114	-0.0005 ± 0.0292 ± 0.0114
	0.28 – 0.37	0.00 – 0.23	1.43	0.054	0.527	0.320	0.150	0.748	0.0051 ± 0.0250 ± 0.0053	0.0051 ± 0.0250 ± 0.0053
		0.23 – 0.36	1.48	0.049	0.597	0.320	0.296	0.662	0.0087 ± 0.0360 ± 0.0013	0.0087 ± 0.0360 ± 0.0013
		0.36 – 0.54	1.50	0.047	0.643	0.319	0.449	0.603	-0.0189 ± 0.0242 ± 0.0039	-0.0189 ± 0.0242 ± 0.0039
		0.54 – 2.00	1.55	0.045	0.692	0.323	0.703	0.536	0.0083 ± 0.0241 ± 0.0073	0.0083 ± 0.0241 ± 0.0073
	0.37 – 0.49	0.00 – 0.23	1.40	0.055	0.505	0.422	0.152	0.774	0.0423 ± 0.0293 ± 0.0042	0.0423 ± 0.0293 ± 0.0042
		0.23 – 0.36	1.45	0.051	0.566	0.423	0.298	0.701	0.0675 ± 0.0384 ± 0.0031	0.0675 ± 0.0384 ± 0.0031
		0.36 – 0.54	1.49	0.048	0.615	0.423	0.448	0.640	-0.0163 ± 0.0361 ± 0.0027	-0.0163 ± 0.0361 ± 0.0027
		0.54 – 2.00	1.53	0.046	0.669	0.424	0.749	0.568	0.0039 ± 0.0254 ± 0.0045	0.0039 ± 0.0254 ± 0.0045
	0.49 – 0.70	0.00 – 0.23	1.37	0.056	0.487	0.579	0.151	0.794	-0.0211 ± 0.0323 ± 0.0008	-0.0211 ± 0.0323 ± 0.0008
		0.23 – 0.36	1.41	0.053	0.532	0.580	0.298	0.743	0.0373 ± 0.0368 ± 0.0051	0.0373 ± 0.0368 ± 0.0051
		0.36 – 0.54	1.44	0.050	0.575	0.578	0.446	0.691	-0.0074 ± 0.0407 ± 0.0026	-0.0074 ± 0.0407 ± 0.0026
		0.54 – 2.00	1.51	0.047	0.638	0.573	0.785	0.611	0.0206 ± 0.0305 ± 0.0044	0.0206 ± 0.0305 ± 0.0044
0.072 – 0.098	0.20 – 0.28	0.00 – 0.23	2.10	0.084	0.484	0.239	0.140	0.791	-0.0063 ± 0.0247 ± 0.0026	-0.0063 ± 0.0247 ± 0.0026
		0.23 – 0.36	2.37	0.084	0.547	0.237	0.294	0.724	-0.0301 ± 0.0360 ± 0.0002	-0.0301 ± 0.0360 ± 0.0002
		0.36 – 0.54	2.46	0.084	0.569	0.238	0.440	0.695	-0.0429 ± 0.0340 ± 0.0024	-0.0429 ± 0.0340 ± 0.0024
		0.54 – 2.00	2.72	0.083	0.632	0.244	0.644	0.622	0.0989 ± 0.0614 ± 0.0157	0.0989 ± 0.0614 ± 0.0157
	0.28 – 0.37	0.00 – 0.23	1.88	0.084	0.432	0.321	0.142	0.836	-0.0373 ± 0.0256 ± 0.0006	-0.0373 ± 0.0256 ± 0.0006
		0.23 – 0.36	2.13	0.084	0.490	0.322	0.292	0.779	0.0639 ± 0.0382 ± 0.0069	0.0639 ± 0.0382 ± 0.0069
		0.36 – 0.54	2.26	0.084	0.523	0.320	0.445	0.742	-0.0427 ± 0.0371 ± 0.0042	-0.0427 ± 0.0371 ± 0.0042
		0.54 – 2.00	2.48	0.084	0.575	0.324	0.678	0.685	0.0363 ± 0.0452 ± 0.0010	0.0363 ± 0.0452 ± 0.0010
	0.37 – 0.49	0.00 – 0.23	1.82	0.084	0.418	0.423	0.146	0.847	-0.0228 ± 0.0296 ± 0.0000	-0.0228 ± 0.0296 ± 0.0000
		0.23 – 0.36	1.95	0.084	0.448	0.424	0.292	0.819	0.0328 ± 0.0363 ± 0.0057	0.0328 ± 0.0363 ± 0.0057
		0.36 – 0.54	2.17	0.084	0.502	0.424	0.442	0.767	-0.0029 ± 0.0438 ± 0.0053	-0.0029 ± 0.0438 ± 0.0053
		0.54 – 2.00	2.37	0.084	0.546	0.425	0.724	0.715	-0.0042 ± 0.0422 ± 0.0084	-0.0042 ± 0.0422 ± 0.0084
	0.49 – 0.70	0.00 – 0.23	1.78	0.084	0.407	0.579	0.148	0.856	-0.0368 ± 0.0344 ± 0.0003	-0.0368 ± 0.0344 ± 0.0003
		0.23 – 0.36	1.85	0.084	0.425	0.581	0.295	0.840	-0.0023 ± 0.0354 ± 0.0043	-0.0023 ± 0.0354 ± 0.0043
		0.36 – 0.54	2.00	0.084	0.461	0.582	0.442	0.808	-0.0751 ± 0.0396 ± 0.0035	-0.0751 ± 0.0396 ± 0.0035
		0.54 – 2.00	2.26	0.084	0.524	0.580	0.751	0.743	0.0535 ± 0.0447 ± 0.0000	0.0535 ± 0.0447 ± 0.0000
0.098 – 0.138	0.20 – 0.28	0.00 – 0.23	2.86	0.116	0.477	0.239	0.138	0.799	-0.0086 ± 0.0250 ± 0.0047	-0.0086 ± 0.0250 ± 0.0047
		0.23 – 0.36	3.17	0.116	0.531	0.238	0.292	0.743	-0.0533 ± 0.0381 ± 0.0042	-0.0533 ± 0.0381 ± 0.0042
		0.36 – 0.54	3.25	0.115	0.545	0.239	0.442	0.724	0.0114 ± 0.0408 ± 0.0029	0.0114 ± 0.0408 ± 0.0029
		0.54 – 2.00	3.54	0.116	0.593	0.244	0.645	0.671	-0.0548 ± 0.0734 ± 0.0063	-0.0548 ± 0.0734 ± 0.0063
	0.28 – 0.37	0.00 – 0.23	2.52	0.116	0.420	0.321	0.144	0.844	0.0177 ± 0.0260 ± 0.0040	0.0177 ± 0.0260 ± 0.0040
		0.23 – 0.36	2.77	0.116	0.462	0.323	0.291	0.806	0.0564 ± 0.0353 ± 0.0047	0.0564 ± 0.0353 ± 0.0047
		0.36 – 0.54	2.98	0.116	0.500	0.322	0.444	0.766	-0.0820 ± 0.0414 ± 0.0030	-0.0820 ± 0.0414 ± 0.0030
		0.54 – 2.00	3.17	0.116	0.532	0.324	0.675	0.732	0.0052 ± 0.0511 ± 0.0012	0.0052 ± 0.0511 ± 0.0012
	0.37 – 0.49	0.00 – 0.23	2.39	0.116	0.399	0.422	0.148	0.860	-0.0522 ± 0.0305 ± 0.0040	-0.0522 ± 0.0305 ± 0.0040
		0.23 – 0.36	2.48	0.116	0.413	0.425	0.293	0.845	0.0484 ± 0.0339 ± 0.0007	0.0484 ± 0.0339 ± 0.0007
		0.36 – 0.54	2.80	0.116	0.467	0.426	0.441	0.797	-0.0219 ± 0.0418 ± 0.0022	-0.0219 ± 0.0418 ± 0.0022
		0.54 – 2.00	3.00	0.115	0.504	0.424	0.716	0.756	-0.0274 ± 0.0468 ± 0.0021	-0.0274 ± 0.0468 ± 0.0021
	0.49 – 0.70	0.00 – 0.23	2.37	0.116	0.396	0.579	0.150	0.863	-0.0001 ± 0.0360 ± 0.0049	-0.0001 ± 0.0360 ± 0.0049
		0.23 – 0.36	2.39	0.116	0.399	0.577	0.295	0.859	-0.0166 ± 0.0363 ± 0.0012	-0.0166 ± 0.0363 ± 0.0012
		0.36 – 0.54	2.55	0.116	0.426	0.583	0.441	0.834	0.0323 ± 0.0376 ± 0.0004	0.0323 ± 0.0376 ± 0.0004
		0.54 – 2.00	2.92	0.115	0.490	0.581	0.747	0.774	0.0186 ± 0.0458 ± 0.0067	0.0186 ± 0.0458 ± 0.0067
0.138 – 0.600	0.20 – 0.28	0.00 – 0.23	4.91	0.204	0.467	0.239	0.141	0.811	0.0038 ± 0.0231 ± 0.0032	0.0038 ± 0.0231 ± 0.0032
		0.23 – 0.36	5.22	0.212	0.486	0.240	0.290	0.790	0.0154 ± 0.0331 ± 0.0141	0.0154 ± 0.0331 ± 0.0141
		0.36 – 0.54	5.18	0.205	0.499	0.239	0.443	0.775	0.0005 ± 0.0447 ± 0.0108	0.0005 ± 0.0447 ± 0.0108
		0.54 – 2.00	5.40	0.211	0.509	0.243	0.645	0.767	-0.0490 ± 0.0915 ± 0.0207	-0.0490 ± 0.0915 ± 0.0207
	0.28 – 0.37	0.00 – 0.23	4.41	0.199	0.426	0.321	0.148	0.842	-0.0443 ± 0.0259 ± 0.0035	-0.0443 ± 0.0259 ± 0.0035
		0.23 – 0.36	4.55	0.208	0.426	0.322	0.291	0.839	0.0136 ± 0.0314 ± 0.0025	0.0136 ± 0.0314 ± 0.0025
		0.36 – 0.54	4.80	0.211	0.450	0.323	0.440	0.816	-0.0005 ± 0.0390 ± 0.0084	-0.0005 ± 0.0390 ± 0.0084
		0.54 – 2.00	4.79	0.204	0.464	0.324	0.679	0.802	-0.0731 ± 0.0605 ± 0.0101	-0.0731 ± 0.0605 ± 0.0101
	0.37 – 0.49	0.00 – 0.23	4.26	0.197	0.414	0.422	0.149	0.852	0.0010 ± 0.0314 ± 0.0033	0.0010 ± 0.0314 ± 0.0033
		0.23 – 0.36	4.31	0.203	0.410	0.424	0.294	0.852	-0.0379 ± 0.0330 ± 0.0000	-0.0379 ± 0.0330 ± 0.0000
		0.36 – 0.54	4.59	0.212	0.423	0.425	0.438	0.840	-0.0576 ± 0.0384 ± 0.0166	-0.0576 ± 0.0384 ± 0.0166
		0.54 – 2.00	4.78	0.208	0.453	0.426	0.712	0.809	-0.0233 ± 0.0492 ± 0.0097	-0.0233 ± 0.0492 ± 0.0097
	0.49 – 0.70	0.00 – 0.23	4.25	0.197	0.413	0.574	0.152	0.852	-0.0169 ± 0.0385 ± 0.0036	-0.0169 ± 0.0385 ± 0.0036
		0.23 – 0.36	4.13	0.198	0.400	0.574	0.295	0.861	-0.0315 ± 0.0385 ± 0.0003	-0.0315 ± 0.0385 ± 0.0003
		0.36 – 0.54	4.25	0.203	0.405	0.579	0.443	0.855	0.0095 ± 0.0372 ± 0.0055	0.0095 ± 0.0372 ± 0.0055
		0.54 – 2.00	4.67	0.210	0.437	0.581	0.726	0.825	-0.0990 ± 0.0433 ± 0.0147	-0.0990 ± 0.0433 ± 0.0147

Table 34. Three-dimensionally binned SFA and CSA amplitudes of the $\sin(3\phi - \phi_S)$ modulation for π^- as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin			Average kinematics						K^+	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(3\phi - \phi_S)/\epsilon \rangle_{U\perp}$	$2\langle \sin(3\phi - \phi_S) \rangle_{U\perp}$
0.023 – 0.072	0.20 – 0.28	0.00 – 0.23	1.48	0.052	0.565	0.239	0.149	0.705	0.0066 ± 0.0614 ± 0.0145	0.0066 ± 0.0614 ± 0.0145
		0.23 – 0.36	1.54	0.048	0.638	0.237	0.297	0.612	-0.0508 ± 0.0683 ± 0.0038	-0.0508 ± 0.0683 ± 0.0038
		0.36 – 0.54	1.55	0.046	0.674	0.239	0.444	0.562	-0.0044 ± 0.0536 ± 0.0069	-0.0044 ± 0.0536 ± 0.0069
		0.54 – 2.00	1.59	0.043	0.734	0.242	0.670	0.476	0.0887 ± 0.0736 ± 0.0189	0.0887 ± 0.0736 ± 0.0189
	0.28 – 0.37	0.00 – 0.23	1.44	0.054	0.529	0.321	0.150	0.747	-0.0116 ± 0.0593 ± 0.0029	-0.0116 ± 0.0593 ± 0.0029
		0.23 – 0.36	1.51	0.050	0.603	0.322	0.298	0.657	-0.0024 ± 0.0838 ± 0.0165	-0.0024 ± 0.0838 ± 0.0165
		0.36 – 0.54	1.54	0.047	0.645	0.322	0.448	0.601	0.0222 ± 0.0605 ± 0.0084	0.0222 ± 0.0605 ± 0.0084
		0.54 – 2.00	1.56	0.044	0.701	0.326	0.722	0.523	0.0156 ± 0.0545 ± 0.0004	0.0156 ± 0.0545 ± 0.0004
	0.37 – 0.49	0.00 – 0.23	1.43	0.055	0.511	0.422	0.148	0.769	0.0758 ± 0.0580 ± 0.0034	0.0758 ± 0.0580 ± 0.0034
		0.23 – 0.36	1.47	0.052	0.557	0.424	0.297	0.713	-0.1085 ± 0.0809 ± 0.0038	-0.1085 ± 0.0809 ± 0.0038
		0.36 – 0.54	1.51	0.050	0.608	0.424	0.449	0.651	0.1060 ± 0.0777 ± 0.0129	0.1060 ± 0.0777 ± 0.0129
		0.54 – 2.00	1.56	0.046	0.671	0.428	0.763	0.565	0.0227 ± 0.0504 ± 0.0051	0.0227 ± 0.0504 ± 0.0051
	0.49 – 0.70	0.00 – 0.23	1.42	0.057	0.493	0.572	0.150	0.787	-0.0253 ± 0.0711 ± 0.0018	-0.0253 ± 0.0711 ± 0.0018
		0.23 – 0.36	1.44	0.054	0.534	0.573	0.298	0.740	0.0729 ± 0.0786 ± 0.0065	0.0729 ± 0.0786 ± 0.0065
		0.36 – 0.54	1.49	0.051	0.587	0.576	0.452	0.675	0.0195 ± 0.0815 ± 0.0130	0.0195 ± 0.0815 ± 0.0130
		0.54 – 2.00	1.53	0.048	0.637	0.580	0.805	0.612	0.0015 ± 0.0508 ± 0.0145	0.0015 ± 0.0508 ± 0.0145
0.072 – 0.098	0.20 – 0.28	0.00 – 0.23	2.21	0.084	0.508	0.241	0.142	0.770	-0.1231 ± 0.0730 ± 0.0243	-0.1231 ± 0.0730 ± 0.0243
		0.23 – 0.36	2.43	0.084	0.562	0.240	0.295	0.709	0.1056 ± 0.0983 ± 0.0098	0.1056 ± 0.0983 ± 0.0098
		0.36 – 0.54	2.50	0.084	0.578	0.241	0.440	0.683	-0.0274 ± 0.1003 ± 0.0145	-0.0274 ± 0.1003 ± 0.0145
		0.54 – 2.00	2.72	0.084	0.630	0.244	0.652	0.624	-0.1550 ± 0.1543 ± 0.0161	-0.1550 ± 0.1543 ± 0.0161
	0.28 – 0.37	0.00 – 0.23	1.98	0.084	0.455	0.323	0.142	0.816	0.0095 ± 0.0582 ± 0.0129	0.0095 ± 0.0582 ± 0.0129
		0.23 – 0.36	2.21	0.084	0.510	0.324	0.293	0.762	-0.0996 ± 0.0913 ± 0.0031	-0.0996 ± 0.0913 ± 0.0031
		0.36 – 0.54	2.38	0.084	0.550	0.324	0.446	0.714	-0.2055 ± 0.0906 ± 0.0120	-0.2055 ± 0.0906 ± 0.0120
		0.54 – 2.00	2.54	0.084	0.587	0.327	0.690	0.669	-0.0719 ± 0.0977 ± 0.0017	-0.0719 ± 0.0977 ± 0.0017
	0.37 – 0.49	0.00 – 0.23	1.88	0.085	0.429	0.423	0.145	0.839	-0.0915 ± 0.0571 ± 0.0104	-0.0915 ± 0.0571 ± 0.0104
		0.23 – 0.36	2.07	0.084	0.475	0.425	0.294	0.795	0.0232 ± 0.0763 ± 0.0112	0.0232 ± 0.0763 ± 0.0112
		0.36 – 0.54	2.23	0.084	0.512	0.427	0.445	0.758	0.0565 ± 0.0950 ± 0.0289	0.0565 ± 0.0950 ± 0.0289
		0.54 – 2.00	2.44	0.084	0.566	0.430	0.735	0.695	-0.0227 ± 0.0838 ± 0.0079	-0.0227 ± 0.0838 ± 0.0079
	0.49 – 0.70	0.00 – 0.23	1.88	0.085	0.427	0.577	0.150	0.842	-0.0916 ± 0.0689 ± 0.0057	-0.0916 ± 0.0689 ± 0.0057
		0.23 – 0.36	1.94	0.084	0.447	0.575	0.297	0.820	0.0953 ± 0.0707 ± 0.0096	0.0953 ± 0.0707 ± 0.0096
		0.36 – 0.54	2.06	0.085	0.470	0.583	0.446	0.798	0.0105 ± 0.0737 ± 0.0082	0.0105 ± 0.0737 ± 0.0082
		0.54 – 2.00	2.33	0.084	0.538	0.587	0.768	0.728	0.0642 ± 0.0727 ± 0.0113	0.0642 ± 0.0727 ± 0.0113
0.098 – 0.138	0.20 – 0.28	0.00 – 0.23	2.96	0.116	0.494	0.241	0.139	0.785	0.0301 ± 0.0702 ± 0.0099	0.0301 ± 0.0702 ± 0.0099
		0.23 – 0.36	3.31	0.116	0.554	0.239	0.290	0.718	0.2306 ± 0.1058 ± 0.0156	0.2306 ± 0.1058 ± 0.0156
		0.36 – 0.54	3.25	0.115	0.548	0.240	0.443	0.720	-0.1294 ± 0.1119 ± 0.0041	-0.1294 ± 0.1119 ± 0.0041
		0.54 – 2.00	3.53	0.115	0.596	0.245	0.650	0.664	-0.0413 ± 0.1893 ± 0.0206	-0.0413 ± 0.1893 ± 0.0206
	0.28 – 0.37	0.00 – 0.23	2.64	0.116	0.441	0.324	0.142	0.829	0.0512 ± 0.0578 ± 0.0161	0.0512 ± 0.0578 ± 0.0161
		0.23 – 0.36	2.91	0.116	0.485	0.326	0.292	0.787	0.0271 ± 0.0870 ± 0.0060	0.0271 ± 0.0870 ± 0.0060
		0.36 – 0.54	3.08	0.115	0.519	0.323	0.446	0.746	0.0540 ± 0.0995 ± 0.0104	0.0540 ± 0.0995 ± 0.0104
		0.54 – 2.00	3.20	0.116	0.535	0.327	0.682	0.726	-0.0579 ± 0.1149 ± 0.0258	-0.0579 ± 0.1149 ± 0.0258
	0.37 – 0.49	0.00 – 0.23	2.54	0.116	0.425	0.424	0.148	0.841	0.0861 ± 0.0600 ± 0.0137	0.0861 ± 0.0600 ± 0.0137
		0.23 – 0.36	2.66	0.116	0.441	0.427	0.291	0.824	0.1254 ± 0.0674 ± 0.0010	0.1254 ± 0.0674 ± 0.0010
		0.36 – 0.54	3.00	0.117	0.497	0.428	0.442	0.773	0.1347 ± 0.0845 ± 0.0015	0.1347 ± 0.0845 ± 0.0015
		0.54 – 2.00	3.21	0.115	0.539	0.428	0.716	0.723	-0.0259 ± 0.0931 ± 0.0108	-0.0259 ± 0.0931 ± 0.0108
	0.49 – 0.70	0.00 – 0.23	2.47	0.116	0.412	0.574	0.150	0.851	-0.0772 ± 0.0647 ± 0.0110	-0.0772 ± 0.0647 ± 0.0110
		0.23 – 0.36	2.50	0.116	0.418	0.577	0.296	0.845	-0.0172 ± 0.0669 ± 0.0025	-0.0172 ± 0.0669 ± 0.0025
		0.36 – 0.54	2.70	0.116	0.451	0.583	0.443	0.815	-0.0580 ± 0.0659 ± 0.0070	-0.0580 ± 0.0659 ± 0.0070
		0.54 – 2.00	3.06	0.115	0.514	0.588	0.752	0.752	0.0403 ± 0.0764 ± 0.0098	0.0403 ± 0.0764 ± 0.0098
0.138 – 0.600	0.20 – 0.28	0.00 – 0.23	5.15	0.207	0.485	0.242	0.138	0.795	-0.0296 ± 0.0635 ± 0.0043	-0.0296 ± 0.0635 ± 0.0043
		0.23 – 0.36	5.33	0.208	0.505	0.243	0.292	0.773	0.0278 ± 0.0969 ± 0.0027	0.0278 ± 0.0969 ± 0.0027
		0.36 – 0.54	5.06	0.196	0.508	0.241	0.445	0.765	-0.0230 ± 0.1220 ± 0.0011	-0.0230 ± 0.1220 ± 0.0011
		0.54 – 2.00	5.22	0.211	0.493	0.246	0.645	0.779	-0.2663 ± 0.2148 ± 0.0075	-0.2663 ± 0.2148 ± 0.0075
	0.28 – 0.37	0.00 – 0.23	4.76	0.204	0.449	0.323	0.142	0.825	-0.1210 ± 0.0555 ± 0.0038	-0.1210 ± 0.0555 ± 0.0038
		0.23 – 0.36	5.01	0.211	0.462	0.325	0.289	0.810	-0.0928 ± 0.0682 ± 0.0001	-0.0928 ± 0.0682 ± 0.0001
		0.36 – 0.54	5.04	0.203	0.488	0.325	0.443	0.783	0.0417 ± 0.0842 ± 0.0056	0.0417 ± 0.0842 ± 0.0056
		0.54 – 2.00	4.69	0.198	0.464	0.327	0.681	0.798	-0.0380 ± 0.1294 ± 0.0169	-0.0380 ± 0.1294 ± 0.0169
	0.37 – 0.49	0.00 – 0.23	4.63	0.204	0.435	0.424	0.150	0.836	0.0010 ± 0.0553 ± 0.0038	0.0010 ± 0.0553 ± 0.0038
		0.23 – 0.36	4.62	0.204	0.437	0.425	0.292	0.831	0.0125 ± 0.0595 ± 0.0037	0.0125 ± 0.0595 ± 0.0037
		0.36 – 0.54	4.91	0.210	0.458	0.426	0.439	0.812	0.0646 ± 0.0671 ± 0.0082	0.0646 ± 0.0671 ± 0.0082
		0.54 – 2.00	5.02	0.204	0.483	0.428	0.707	0.784	-0.0646 ± 0.0920 ± 0.0115	-0.0646 ± 0.0920 ± 0.0115
	0.49 – 0.70	0.00 – 0.23	4.55	0.204	0.426	0.576	0.149	0.843	-0.0158 ± 0.0640 ± 0.0005	-0.0158 ± 0.0640 ± 0.0005
		0.23 – 0.36	4.52	0.206	0.422	0.577	0.296	0.844	0.0856 ± 0.0621 ± 0.0026	0.0856 ± 0.0621 ± 0.0026
		0.36 – 0.54	4.63	0.207	0.435	0.583	0.443	0.831	-0.0101 ± 0.0577 ± 0.0052	-0.0101 ± 0.0577 ± 0.0052
		0.54 – 2.00	5.06	0.210	0.473	0.589	0.731	0.796	0.0487 ± 0.0656 ± 0.0073	0.0487 ± 0.0656 ± 0.0073

Table 35. Three-dimensionally binned SFA and CSA amplitudes of the $\sin(3\phi - \phi_S)$ modulation for K^+ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin			Average kinematics						K^-	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(3\phi - \phi_S)/\epsilon \rangle_{U\perp}$	$2\langle \sin(3\phi - \phi_S) \rangle_{U\perp}$
0.023 – 0.072	0.20 – 0.28	0.00 – 0.23	1.48	0.051	0.575	0.236	0.152	0.692	0.0625 ± 0.0833 ± 0.0149	0.0625 ± 0.0833 ± 0.0149
		0.23 – 0.36	1.51	0.047	0.646	0.236	0.298	0.601	0.0487 ± 0.0895 ± 0.0018	0.0487 ± 0.0895 ± 0.0018
		0.36 – 0.54	1.54	0.045	0.684	0.237	0.444	0.547	0.0868 ± 0.0676 ± 0.0135	0.0868 ± 0.0676 ± 0.0135
		0.54 – 2.00	1.61	0.043	0.744	0.242	0.666	0.461	0.0037 ± 0.0972 ± 0.0039	0.0037 ± 0.0972 ± 0.0039
	0.28 – 0.37	0.00 – 0.23	1.45	0.053	0.537	0.319	0.151	0.738	0.0521 ± 0.0823 ± 0.0135	0.0521 ± 0.0823 ± 0.0135
		0.23 – 0.36	1.50	0.049	0.608	0.320	0.296	0.650	0.1029 ± 0.1181 ± 0.0091	0.1029 ± 0.1181 ± 0.0091
		0.36 – 0.54	1.51	0.047	0.644	0.319	0.449	0.602	-0.0254 ± 0.0838 ± 0.0188	-0.0254 ± 0.0838 ± 0.0188
		0.54 – 2.00	1.56	0.044	0.701	0.324	0.724	0.523	0.1157 ± 0.0755 ± 0.0054	0.1157 ± 0.0755 ± 0.0054
	0.37 – 0.49	0.00 – 0.23	1.40	0.054	0.513	0.424	0.146	0.768	-0.1124 ± 0.0869 ± 0.0027	-0.1124 ± 0.0869 ± 0.0027
		0.23 – 0.36	1.48	0.051	0.579	0.422	0.298	0.689	0.0826 ± 0.1265 ± 0.0174	0.0826 ± 0.1265 ± 0.0174
		0.36 – 0.54	1.53	0.049	0.622	0.423	0.448	0.633	-0.0131 ± 0.1200 ± 0.0129	-0.0131 ± 0.1200 ± 0.0129
		0.54 – 2.00	1.54	0.045	0.674	0.425	0.770	0.562	0.0649 ± 0.0751 ± 0.0102	0.0649 ± 0.0751 ± 0.0102
	0.49 – 0.70	0.00 – 0.23	1.41	0.055	0.508	0.562	0.151	0.771	-0.0042 ± 0.1066 ± 0.0072	-0.0042 ± 0.1066 ± 0.0072
		0.23 – 0.36	1.44	0.052	0.550	0.566	0.298	0.721	-0.0274 ± 0.1196 ± 0.0057	-0.0274 ± 0.1196 ± 0.0057
		0.36 – 0.54	1.49	0.050	0.595	0.572	0.446	0.664	0.1109 ± 0.1379 ± 0.0018	0.1109 ± 0.1379 ± 0.0018
		0.54 – 2.00	1.53	0.046	0.662	0.569	0.799	0.578	0.1080 ± 0.0921 ± 0.0143	0.1080 ± 0.0921 ± 0.0143
0.072 – 0.098	0.20 – 0.28	0.00 – 0.23	2.18	0.084	0.503	0.239	0.139	0.775	-0.0562 ± 0.0998 ± 0.0079	-0.0562 ± 0.0998 ± 0.0079
		0.23 – 0.36	2.46	0.084	0.568	0.237	0.294	0.701	-0.3256 ± 0.1439 ± 0.0041	-0.3256 ± 0.1439 ± 0.0041
		0.36 – 0.54	2.54	0.084	0.586	0.237	0.440	0.677	0.1724 ± 0.1270 ± 0.0204	0.1724 ± 0.1270 ± 0.0204
		0.54 – 2.00	2.75	0.084	0.637	0.242	0.648	0.614	-0.2333 ± 0.2040 ± 0.0199	-0.2333 ± 0.2040 ± 0.0199
	0.28 – 0.37	0.00 – 0.23	1.95	0.084	0.448	0.323	0.138	0.824	0.0196 ± 0.0840 ± 0.0093	0.0196 ± 0.0840 ± 0.0093
		0.23 – 0.36	2.24	0.084	0.518	0.322	0.292	0.752	0.0178 ± 0.1410 ± 0.0180	0.0178 ± 0.1410 ± 0.0180
		0.36 – 0.54	2.40	0.084	0.555	0.321	0.444	0.712	-0.0323 ± 0.1451 ± 0.0167	-0.0323 ± 0.1451 ± 0.0167
		0.54 – 2.00	2.48	0.084	0.573	0.324	0.693	0.689	-0.0991 ± 0.1432 ± 0.0003	-0.0991 ± 0.1432 ± 0.0003
	0.37 – 0.49	0.00 – 0.23	1.84	0.084	0.426	0.424	0.143	0.842	-0.1227 ± 0.0977 ± 0.0154	-0.1227 ± 0.0977 ± 0.0154
		0.23 – 0.36	2.06	0.084	0.475	0.424	0.294	0.794	0.0073 ± 0.1184 ± 0.0136	0.0073 ± 0.1184 ± 0.0136
		0.36 – 0.54	2.27	0.083	0.528	0.424	0.443	0.743	0.1840 ± 0.1478 ± 0.0110	0.1840 ± 0.1478 ± 0.0110
		0.54 – 2.00	2.45	0.084	0.566	0.423	0.727	0.695	-0.1401 ± 0.1355 ± 0.0094	-0.1401 ± 0.1355 ± 0.0094
	0.49 – 0.70	0.00 – 0.23	1.89	0.085	0.431	0.567	0.150	0.837	0.0317 ± 0.1218 ± 0.0075	0.0317 ± 0.1218 ± 0.0075
		0.23 – 0.36	2.00	0.085	0.455	0.570	0.295	0.811	-0.2041 ± 0.1329 ± 0.0042	-0.2041 ± 0.1329 ± 0.0042
		0.36 – 0.54	2.16	0.084	0.495	0.577	0.440	0.775	-0.1746 ± 0.1363 ± 0.0025	-0.1746 ± 0.1363 ± 0.0025
		0.54 – 2.00	2.42	0.084	0.556	0.570	0.772	0.707	0.0363 ± 0.1452 ± 0.0131	0.0363 ± 0.1452 ± 0.0131
0.098 – 0.138	0.20 – 0.28	0.00 – 0.23	3.02	0.116	0.505	0.240	0.138	0.774	0.1217 ± 0.1012 ± 0.0043	0.1217 ± 0.1012 ± 0.0043
		0.23 – 0.36	3.26	0.115	0.549	0.241	0.290	0.727	-0.1763 ± 0.1619 ± 0.0112	-0.1763 ± 0.1619 ± 0.0112
		0.36 – 0.54	3.30	0.115	0.556	0.238	0.444	0.713	0.0330 ± 0.1534 ± 0.0180	0.0330 ± 0.1534 ± 0.0180
		0.54 – 2.00	3.61	0.115	0.607	0.243	0.649	0.655	-0.0507 ± 0.2378 ± 0.0010	-0.0507 ± 0.2378 ± 0.0010
	0.28 – 0.37	0.00 – 0.23	2.69	0.116	0.450	0.323	0.142	0.819	-0.1115 ± 0.0942 ± 0.0002	-0.1115 ± 0.0942 ± 0.0002
		0.23 – 0.36	2.98	0.116	0.501	0.322	0.294	0.769	0.3215 ± 0.1360 ± 0.0281	0.3215 ± 0.1360 ± 0.0281
		0.36 – 0.54	3.06	0.115	0.516	0.324	0.450	0.750	0.1612 ± 0.1519 ± 0.0161	0.1612 ± 0.1519 ± 0.0161
		0.54 – 2.00	3.34	0.116	0.559	0.324	0.694	0.703	-0.0016 ± 0.1687 ± 0.0168	-0.0016 ± 0.1687 ± 0.0168
	0.37 – 0.49	0.00 – 0.23	2.42	0.115	0.408	0.423	0.149	0.854	-0.0062 ± 0.0999 ± 0.0106	-0.0062 ± 0.0999 ± 0.0106
		0.23 – 0.36	2.69	0.117	0.447	0.427	0.293	0.819	0.0044 ± 0.1153 ± 0.0138	0.0044 ± 0.1153 ± 0.0138
		0.36 – 0.54	2.94	0.116	0.491	0.428	0.442	0.778	-0.0025 ± 0.1424 ± 0.0033	-0.0025 ± 0.1424 ± 0.0033
		0.54 – 2.00	3.19	0.114	0.540	0.424	0.741	0.723	0.0294 ± 0.1460 ± 0.0078	0.0294 ± 0.1460 ± 0.0078
	0.49 – 0.70	0.00 – 0.23	2.43	0.115	0.407	0.563	0.149	0.854	0.0709 ± 0.1397 ± 0.0039	0.0709 ± 0.1397 ± 0.0039
		0.23 – 0.36	2.47	0.115	0.416	0.572	0.295	0.848	0.0750 ± 0.1309 ± 0.0137	0.0750 ± 0.1309 ± 0.0137
		0.36 – 0.54	2.72	0.116	0.453	0.577	0.435	0.813	-0.0036 ± 0.1372 ± 0.0058	-0.0036 ± 0.1372 ± 0.0058
		0.54 – 2.00	3.08	0.115	0.517	0.574	0.764	0.750	0.1999 ± 0.1596 ± 0.0012	0.1999 ± 0.1596 ± 0.0012
0.138 – 0.600	0.20 – 0.28	0.00 – 0.23	4.98	0.201	0.481	0.241	0.144	0.800	0.1201 ± 0.0857 ± 0.0032	0.1201 ± 0.0857 ± 0.0032
		0.23 – 0.36	5.30	0.206	0.507	0.241	0.290	0.770	0.1385 ± 0.1325 ± 0.0139	0.1385 ± 0.1325 ± 0.0139
		0.36 – 0.54	5.32	0.204	0.518	0.239	0.449	0.757	0.3865 ± 0.1606 ± 0.0489	0.3865 ± 0.1606 ± 0.0489
		0.54 – 2.00	5.44	0.205	0.527	0.245	0.663	0.747	0.0552 ± 0.3080 ± 0.0109	0.0552 ± 0.3080 ± 0.0109
	0.28 – 0.37	0.00 – 0.23	4.71	0.203	0.451	0.322	0.146	0.822	-0.0796 ± 0.0887 ± 0.0019	-0.0796 ± 0.0887 ± 0.0019
		0.23 – 0.36	4.92	0.209	0.462	0.325	0.291	0.809	0.0813 ± 0.1050 ± 0.0052	0.0813 ± 0.1050 ± 0.0052
		0.36 – 0.54	4.90	0.205	0.473	0.325	0.441	0.795	-0.1397 ± 0.1328 ± 0.0285	-0.1397 ± 0.1328 ± 0.0285
		0.54 – 2.00	5.07	0.200	0.503	0.324	0.691	0.765	-0.1348 ± 0.1766 ± 0.0272	-0.1348 ± 0.1766 ± 0.0272
	0.37 – 0.49	0.00 – 0.23	4.35	0.195	0.430	0.420	0.149	0.839	-0.1236 ± 0.1106 ± 0.0040	-0.1236 ± 0.1106 ± 0.0040
		0.23 – 0.36	4.49	0.205	0.422	0.423	0.293	0.843	0.0092 ± 0.1103 ± 0.0142	0.0092 ± 0.1103 ± 0.0142
		0.36 – 0.54	4.75	0.207	0.450	0.426	0.437	0.817	-0.1127 ± 0.1220 ± 0.0330	-0.1127 ± 0.1220 ± 0.0330
		0.54 – 2.00	4.87	0.203	0.474	0.425	0.728	0.792	-0.0066 ± 0.1506 ± 0.0038	-0.0066 ± 0.1506 ± 0.0038
	0.49 – 0.70	0.00 – 0.23	4.39	0.196	0.432	0.562	0.154	0.839	0.1942 ± 0.1388 ± 0.0188	0.1942 ± 0.1388 ± 0.0188
		0.23 – 0.36	4.35	0.201	0.419	0.571	0.294	0.846	0.0135 ± 0.1432 ± 0.0108	0.0135 ± 0.1432 ± 0.0108
		0.36 – 0.54	4.56	0.207	0.429	0.577	0.440	0.838	-0.0078 ± 0.1262 ± 0.0070	-0.0078 ± 0.1262 ± 0.0070
		0.54 – 2.00	4.85	0.204	0.470	0.579	0.735	0.796	-0.2108 ± 0.1358 ± 0.0182	-0.2108 ± 0.1358 ± 0.0182

Table 36. Three-dimensionally binned SFA and CSA amplitudes of the $\sin(3\phi - \phi_S)$ modulation for K^- as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin			Average kinematics						p	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(3\phi - \phi_S)/\epsilon \rangle_{U\perp}$	$2\langle \sin(3\phi - \phi_S) \rangle_{U\perp}$
0.023 – 0.073	0.20 – 0.34	0.00 – 0.24	1.60	0.048	0.656	0.281	0.167	0.598	-0.0172 ± 0.1006 ± 0.0097	-0.0172 ± 0.1006 ± 0.0097
		0.24 – 0.40	1.61	0.045	0.698	0.274	0.327	0.535	-0.0146 ± 0.0831 ± 0.0035	-0.0146 ± 0.0831 ± 0.0035
		0.40 – 0.57	1.60	0.044	0.713	0.271	0.483	0.512	-0.0130 ± 0.0597 ± 0.0040	-0.0130 ± 0.0597 ± 0.0040
		0.57 – 2.00	1.60	0.043	0.734	0.276	0.728	0.480	-0.0604 ± 0.0547 ± 0.0002	-0.0604 ± 0.0547 ± 0.0002
	0.34 – 0.43	0.00 – 0.24	1.48	0.053	0.544	0.384	0.157	0.736	0.0898 ± 0.0691 ± 0.0038	0.0898 ± 0.0691 ± 0.0038
		0.24 – 0.40	1.51	0.050	0.603	0.384	0.322	0.659	0.1301 ± 0.0937 ± 0.0280	0.1301 ± 0.0937 ± 0.0280
		0.40 – 0.57	1.54	0.049	0.632	0.383	0.483	0.620	0.0418 ± 0.0816 ± 0.0181	0.0418 ± 0.0816 ± 0.0181
		0.57 – 2.00	1.54	0.046	0.669	0.384	0.766	0.568	-0.0013 ± 0.0556 ± 0.0078	-0.0013 ± 0.0556 ± 0.0078
	0.43 – 0.52	0.00 – 0.24	1.43	0.056	0.503	0.473	0.159	0.777	0.0887 ± 0.0720 ± 0.0062	0.0887 ± 0.0720 ± 0.0062
		0.24 – 0.40	1.47	0.052	0.567	0.471	0.322	0.699	0.0536 ± 0.0892 ± 0.0032	0.0536 ± 0.0892 ± 0.0032
		0.40 – 0.57	1.50	0.050	0.597	0.472	0.481	0.663	0.1177 ± 0.1013 ± 0.0156	0.1177 ± 0.1013 ± 0.0156
		0.57 – 2.00	1.52	0.047	0.641	0.471	0.796	0.604	0.0214 ± 0.0675 ± 0.0044	0.0214 ± 0.0675 ± 0.0044
	0.52 – 0.70	0.00 – 0.24	1.40	0.057	0.487	0.588	0.153	0.795	-0.0185 ± 0.0793 ± 0.0075	-0.0185 ± 0.0793 ± 0.0075
		0.24 – 0.40	1.45	0.055	0.527	0.587	0.321	0.747	0.0845 ± 0.0839 ± 0.0142	0.0845 ± 0.0839 ± 0.0142
		0.40 – 0.57	1.46	0.052	0.561	0.589	0.482	0.707	0.0876 ± 0.1028 ± 0.0043	0.0876 ± 0.1028 ± 0.0043
		0.57 – 2.00	1.50	0.049	0.607	0.591	0.808	0.649	-0.0350 ± 0.0713 ± 0.0063	-0.0350 ± 0.0713 ± 0.0063
0.073 – 0.107	0.20 – 0.34	0.00 – 0.24	2.83	0.089	0.617	0.293	0.158	0.653	-0.0181 ± 0.1129 ± 0.0088	-0.0181 ± 0.1129 ± 0.0088
		0.24 – 0.40	2.91	0.088	0.638	0.285	0.321	0.624	-0.1290 ± 0.1385 ± 0.0243	-0.1290 ± 0.1385 ± 0.0243
		0.40 – 0.57	3.01	0.088	0.661	0.279	0.481	0.592	-0.1892 ± 0.1243 ± 0.0122	-0.1892 ± 0.1243 ± 0.0122
		0.57 – 2.00	3.03	0.088	0.666	0.282	0.718	0.584	0.0765 ± 0.1119 ± 0.0165	0.0765 ± 0.1119 ± 0.0165
	0.34 – 0.43	0.00 – 0.24	2.34	0.089	0.509	0.385	0.148	0.775	0.0038 ± 0.0770 ± 0.0194	0.0038 ± 0.0770 ± 0.0194
		0.24 – 0.40	2.49	0.088	0.545	0.385	0.317	0.732	-0.0174 ± 0.0948 ± 0.0288	-0.0174 ± 0.0948 ± 0.0288
		0.40 – 0.57	2.53	0.088	0.558	0.385	0.480	0.717	0.0376 ± 0.1115 ± 0.0129	0.0376 ± 0.1115 ± 0.0129
		0.57 – 2.00	2.63	0.088	0.575	0.385	0.744	0.694	0.0828 ± 0.0944 ± 0.0383	0.0828 ± 0.0944 ± 0.0383
	0.43 – 0.52	0.00 – 0.24	2.10	0.089	0.458	0.473	0.155	0.817	0.0026 ± 0.0732 ± 0.0019	0.0026 ± 0.0732 ± 0.0019
		0.24 – 0.40	2.22	0.088	0.485	0.473	0.319	0.789	0.0686 ± 0.0781 ± 0.0193	0.0686 ± 0.0781 ± 0.0193
		0.40 – 0.57	2.34	0.088	0.515	0.474	0.477	0.759	-0.1544 ± 0.1045 ± 0.0344	-0.1544 ± 0.1045 ± 0.0344
		0.57 – 2.00	2.45	0.088	0.538	0.472	0.773	0.731	-0.0431 ± 0.0980 ± 0.0430	-0.0431 ± 0.0980 ± 0.0430
	0.52 – 0.70	0.00 – 0.24	1.89	0.089	0.410	0.592	0.156	0.856	0.1153 ± 0.0677 ± 0.0047	0.1153 ± 0.0677 ± 0.0047
		0.24 – 0.40	1.95	0.089	0.427	0.593	0.320	0.839	0.0270 ± 0.0671 ± 0.0000	0.0270 ± 0.0671 ± 0.0000
		0.40 – 0.57	2.05	0.088	0.450	0.594	0.481	0.817	-0.0953 ± 0.0848 ± 0.0179	-0.0953 ± 0.0848 ± 0.0179
		0.57 – 2.00	2.24	0.088	0.494	0.598	0.781	0.772	-0.1477 ± 0.0871 ± 0.0365	-0.1477 ± 0.0871 ± 0.0365
0.107 – 0.157	0.20 – 0.34	0.00 – 0.24	3.97	0.128	0.600	0.295	0.156	0.677	0.0287 ± 0.1154 ± 0.0098	0.0287 ± 0.1154 ± 0.0098
		0.24 – 0.40	4.13	0.129	0.622	0.288	0.321	0.648	-0.1851 ± 0.1424 ± 0.0376	-0.1851 ± 0.1424 ± 0.0376
		0.40 – 0.57	4.27	0.128	0.644	0.283	0.481	0.617	0.1292 ± 0.1477 ± 0.0193	0.1292 ± 0.1477 ± 0.0193
		0.57 – 2.00	4.24	0.127	0.646	0.288	0.719	0.613	0.2414 ± 0.1535 ± 0.0074	0.2414 ± 0.1535 ± 0.0074
	0.34 – 0.43	0.00 – 0.24	3.38	0.130	0.504	0.387	0.152	0.780	-0.2244 ± 0.0801 ± 0.0133	-0.2244 ± 0.0801 ± 0.0133
		0.24 – 0.40	3.48	0.129	0.523	0.388	0.316	0.759	-0.0672 ± 0.0882 ± 0.0048	-0.0672 ± 0.0882 ± 0.0048
		0.40 – 0.57	3.69	0.128	0.555	0.386	0.477	0.722	0.1035 ± 0.1210 ± 0.0006	0.1035 ± 0.1210 ± 0.0006
		0.57 – 2.00	3.71	0.127	0.563	0.385	0.754	0.712	-0.0482 ± 0.1426 ± 0.0178	-0.0482 ± 0.1426 ± 0.0178
	0.43 – 0.52	0.00 – 0.24	3.06	0.129	0.457	0.474	0.156	0.820	0.0229 ± 0.0753 ± 0.0098	0.0229 ± 0.0753 ± 0.0098
		0.24 – 0.40	3.14	0.130	0.469	0.475	0.317	0.807	-0.0314 ± 0.0832 ± 0.0047	-0.0314 ± 0.0832 ± 0.0047
		0.40 – 0.57	3.29	0.129	0.492	0.472	0.478	0.784	-0.1730 ± 0.1115 ± 0.0086	-0.1730 ± 0.1115 ± 0.0086
		0.57 – 2.00	3.45	0.128	0.524	0.473	0.771	0.747	0.0626 ± 0.1280 ± 0.0003	0.0626 ± 0.1280 ± 0.0003
	0.52 – 0.70	0.00 – 0.24	2.75	0.129	0.413	0.594	0.154	0.852	-0.0973 ± 0.0748 ± 0.0138	-0.0973 ± 0.0748 ± 0.0138
		0.24 – 0.40	2.77	0.129	0.415	0.594	0.320	0.848	0.0398 ± 0.0713 ± 0.0052	0.0398 ± 0.0713 ± 0.0052
		0.40 – 0.57	2.85	0.130	0.425	0.602	0.479	0.840	0.0433 ± 0.0874 ± 0.0096	0.0433 ± 0.0874 ± 0.0096
		0.57 – 2.00	3.17	0.129	0.476	0.602	0.769	0.788	-0.0747 ± 0.0977 ± 0.0254	-0.0747 ± 0.0977 ± 0.0254
0.157 – 0.600	0.20 – 0.34	0.00 – 0.24	6.65	0.229	0.566	0.301	0.155	0.717	0.1448 ± 0.1091 ± 0.0327	0.1448 ± 0.1091 ± 0.0327
		0.24 – 0.40	6.49	0.219	0.579	0.298	0.317	0.703	0.2549 ± 0.1158 ± 0.0136	0.2549 ± 0.1158 ± 0.0136
		0.40 – 0.57	6.54	0.211	0.608	0.290	0.476	0.664	-0.3771 ± 0.1630 ± 0.0204	-0.3771 ± 0.1630 ± 0.0204
		0.57 – 2.00	6.59	0.216	0.597	0.292	0.719	0.678	0.0478 ± 0.2108 ± 0.0003	0.0478 ± 0.2108 ± 0.0003
	0.34 – 0.43	0.00 – 0.24	5.84	0.231	0.492	0.386	0.154	0.793	-0.0244 ± 0.0757 ± 0.0140	-0.0244 ± 0.0757 ± 0.0140
		0.24 – 0.40	5.96	0.233	0.499	0.387	0.315	0.786	-0.0111 ± 0.0803 ± 0.0134	-0.0111 ± 0.0803 ± 0.0134
		0.40 – 0.57	5.97	0.230	0.509	0.389	0.473	0.774	-0.0077 ± 0.1153 ± 0.0088	-0.0077 ± 0.1153 ± 0.0088
		0.57 – 2.00	6.10	0.235	0.511	0.386	0.764	0.771	0.1110 ± 0.1572 ± 0.0130	0.1110 ± 0.1572 ± 0.0130
	0.43 – 0.52	0.00 – 0.24	5.22	0.228	0.444	0.474	0.153	0.833	-0.0007 ± 0.0745 ± 0.0098	-0.0007 ± 0.0745 ± 0.0098
		0.24 – 0.40	5.38	0.234	0.450	0.473	0.316	0.826	-0.0307 ± 0.0743 ± 0.0117	-0.0307 ± 0.0743 ± 0.0117
		0.40 – 0.57	5.47	0.234	0.458	0.476	0.476	0.818	0.0231 ± 0.0986 ± 0.0412	0.0231 ± 0.0986 ± 0.0412
		0.57 – 2.00	5.60	0.237	0.467	0.476	0.756	0.805	0.2371 ± 0.1336 ± 0.0023	0.2371 ± 0.1336 ± 0.0023
	0.52 – 0.70	0.00 – 0.24	4.95	0.223	0.426	0.593	0.156	0.844	0.0417 ± 0.0757 ± 0.0193	0.0417 ± 0.0757 ± 0.0193
		0.24 – 0.40	4.89	0.229	0.411	0.594	0.319	0.855	0.0388 ± 0.0724 ± 0.0026	0.0388 ± 0.0724 ± 0.0026
		0.40 – 0.57	4.88	0.231	0.411	0.599	0.479	0.853	-0.1357 ± 0.0843 ± 0.0056	-0.1357 ± 0.0843 ± 0.0056
		0.57 – 2.00	5.07	0.233	0.427	0.604	0.749	0.837	-0.0745 ± 0.1005 ± 0.0083	-0.0745 ± 0.1005 ± 0.0083

Table 37. Three-dimensionally binned SFA and CSA amplitudes of the $\sin(3\phi - \phi_S)$ modulation for p as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

5.4 Worm-gear asymmetry

Kinematic bin		Average kinematics						π^+	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(\phi - \phi_S)/\sqrt{1-\epsilon^2} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(\phi - \phi_S) \rangle_{\mathrm{L}\perp}$
x	0.023 – 0.046	1.29	0.036	0.702	0.336	0.486	0.526	-0.0028 ± 0.0238 ± 0.0059	-0.0058 ± 0.0201 ± 0.0047
	0.046 – 0.067	1.64	0.056	0.567	0.356	0.408	0.700	0.0066 ± 0.0270 ± 0.0083	0.0083 ± 0.0195 ± 0.0056
	0.067 – 0.082	1.98	0.074	0.516	0.366	0.375	0.752	0.0228 ± 0.0383 ± 0.0120	0.0151 ± 0.0255 ± 0.0082
	0.082 – 0.105	2.34	0.093	0.489	0.374	0.358	0.778	-0.0260 ± 0.0369 ± 0.0121	-0.0150 ± 0.0234 ± 0.0071
	0.082 – 0.105	2.34	0.093	0.489	0.374	0.358	0.778	-0.0260 ± 0.0369 ± 0.0121	-0.0150 ± 0.0234 ± 0.0071
	0.105 – 0.134	2.87	0.118	0.469	0.379	0.348	0.796	0.0473 ± 0.0408 ± 0.0185	0.0253 ± 0.0252 ± 0.0099
	0.134 – 0.186	3.69	0.157	0.456	0.379	0.342	0.811	0.1509 ± 0.0425 ± 0.0246	0.0930 ± 0.0260 ± 0.0117
	0.186 – 0.600	5.71	0.254	0.437	0.375	0.343	0.832	0.0120 ± 0.0486 ± 0.0349	0.0045 ± 0.0302 ± 0.0128
z	0.200 – 0.260	2.44	0.087	0.594	0.229	0.344	0.661	0.0237 ± 0.0222 ± 0.0147	0.0211 ± 0.0164 ± 0.0094
	0.260 – 0.320	2.46	0.094	0.556	0.289	0.371	0.702	0.0104 ± 0.0264 ± 0.0174	0.0146 ± 0.0186 ± 0.0109
	0.320 – 0.380	2.45	0.098	0.533	0.349	0.394	0.725	0.0062 ± 0.0320 ± 0.0213	-0.0087 ± 0.0215 ± 0.0133
	0.380 – 0.450	2.45	0.100	0.520	0.413	0.418	0.740	0.0366 ± 0.0362 ± 0.0241	0.0209 ± 0.0235 ± 0.0142
	0.450 – 0.520	2.44	0.101	0.508	0.483	0.441	0.753	0.0259 ± 0.0450 ± 0.0224	0.0276 ± 0.0280 ± 0.0123
	0.450 – 0.520	2.44	0.101	0.508	0.483	0.441	0.753	0.0259 ± 0.0450 ± 0.0224	0.0276 ± 0.0280 ± 0.0123
	0.520 – 0.600	2.43	0.102	0.499	0.558	0.460	0.763	-0.0166 ± 0.0522 ± 0.0268	-0.0121 ± 0.0315 ± 0.0143
	0.600 – 0.700	2.41	0.104	0.481	0.647	0.466	0.785	0.0367 ± 0.0596 ± 0.0209	0.0136 ± 0.0344 ± 0.0097
	0.700 – 0.760	2.41	0.107	0.457	0.729	0.453	0.813	-0.0538 ± 0.0970 ± 0.0200	-0.0398 ± 0.0529 ± 0.0081
	0.760 – 0.840	2.35	0.108	0.434	0.798	0.433	0.837	0.0267 ± 0.1009 ± 0.0163	-0.0069 ± 0.0531 ± 0.0068
	0.840 – 1.200	2.31	0.116	0.394	0.916	0.376	0.872	-0.1666 ± 0.0969 ± 0.0182	-0.0713 ± 0.0479 ± 0.0069
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.56	0.110	0.460	0.341	0.110	0.813	0.0157 ± 0.0391 ± 0.0134	0.0122 ± 0.0221 ± 0.0062
	0.170 – 0.250	2.56	0.108	0.489	0.350	0.211	0.779	0.0967 ± 0.0424 ± 0.0131	0.0467 ± 0.0241 ± 0.0086
	0.250 – 0.310	2.52	0.103	0.514	0.354	0.280	0.750	-0.0390 ± 0.0467 ± 0.0120	-0.0025 ± 0.0277 ± 0.0090
	0.310 – 0.380	2.46	0.097	0.540	0.355	0.345	0.721	0.0536 ± 0.0383 ± 0.0210	0.0176 ± 0.0250 ± 0.0130
	0.310 – 0.380	2.46	0.097	0.540	0.355	0.345	0.721	0.0536 ± 0.0383 ± 0.0210	0.0176 ± 0.0250 ± 0.0130
	0.380 – 0.520	2.39	0.090	0.570	0.356	0.446	0.686	0.0145 ± 0.0254 ± 0.0218	0.0159 ± 0.0182 ± 0.0141
	0.520 – 0.690	2.34	0.084	0.601	0.373	0.594	0.648	0.0070 ± 0.0274 ± 0.0201	0.0065 ± 0.0209 ± 0.0144
	0.690 – 2.000	2.30	0.076	0.642	0.429	0.849	0.597	-0.0160 ± 0.0328 ± 0.0178	-0.0124 ± 0.0261 ± 0.0138

Table 38. One-dimensionally binned SFA and CSA amplitudes of the $\cos(\phi - \phi_S)$ modulation for π^+ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin		Average kinematics						π^0	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(\phi - \phi_S)/\sqrt{1-\epsilon^2} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(\phi - \phi_S) \rangle_{\mathrm{L}\perp}$
x	0.023 – 0.046	1.30	0.036	0.712	0.325	0.492	0.512	-0.0313 ± 0.0622 ± 0.0213	-0.0239 ± 0.0529 ± 0.0319
	0.046 – 0.067	1.72	0.056	0.597	0.352	0.406	0.665	-0.0069 ± 0.0722 ± 0.0213	-0.0049 ± 0.0535 ± 0.0319
	0.067 – 0.082	2.14	0.074	0.558	0.366	0.374	0.708	0.0856 ± 0.0999 ± 0.0213	0.0283 ± 0.0695 ± 0.0319
	0.082 – 0.105	2.58	0.093	0.538	0.372	0.353	0.731	0.0990 ± 0.0981 ± 0.0213	0.0385 ± 0.0647 ± 0.0320
	0.082 – 0.105	2.58	0.093	0.538	0.372	0.353	0.731	0.0990 ± 0.0981 ± 0.0213	0.0385 ± 0.0647 ± 0.0320
	0.105 – 0.134	3.19	0.118	0.522	0.378	0.338	0.749	-0.1712 ± 0.1192 ± 0.0214	-0.0913 ± 0.0747 ± 0.0319
	0.134 – 0.186	4.10	0.156	0.507	0.380	0.323	0.766	0.1606 ± 0.1169 ± 0.0217	0.0666 ± 0.0726 ± 0.0320
	0.186 – 0.600	6.14	0.249	0.479	0.386	0.326	0.797	0.2372 ± 0.1334 ± 0.0232	0.1263 ± 0.0848 ± 0.0321
z	0.200 – 0.260	2.45	0.078	0.648	0.229	0.337	0.598	0.0487 ± 0.0729 ± 0.0128	0.0492 ± 0.0586 ± 0.0204
	0.260 – 0.320	2.49	0.085	0.609	0.289	0.372	0.645	-0.0258 ± 0.0718 ± 0.0130	-0.0245 ± 0.0548 ± 0.0205
	0.320 – 0.380	2.52	0.090	0.581	0.348	0.401	0.679	0.0538 ± 0.0793 ± 0.0136	0.0549 ± 0.0582 ± 0.0209
	0.380 – 0.450	2.53	0.095	0.558	0.413	0.427	0.705	0.0796 ± 0.0844 ± 0.0129	0.0540 ± 0.0569 ± 0.0205
	0.450 – 0.520	2.55	0.099	0.537	0.483	0.450	0.728	0.1090 ± 0.0974 ± 0.0137	0.0455 ± 0.0626 ± 0.0208
	0.450 – 0.520	2.55	0.099	0.537	0.483	0.450	0.728	0.1090 ± 0.0974 ± 0.0137	0.0455 ± 0.0626 ± 0.0208
	0.520 – 0.600	2.57	0.102	0.517	0.557	0.469	0.750	-0.1167 ± 0.1126 ± 0.0145	-0.0949 ± 0.0678 ± 0.0208
	0.600 – 0.700	2.59	0.106	0.496	0.645	0.483	0.774	0.0897 ± 0.1303 ± 0.0130	0.0496 ± 0.0744 ± 0.0204
	0.700 – 0.760	2.61	0.112	0.472	0.728	0.494	0.799	-0.5364 ± 0.2020 ± 0.0128	-0.2761 ± 0.1141 ± 0.0204
	0.760 – 0.840	2.66	0.116	0.457	0.796	0.488	0.815	0.1613 ± 0.2417 ± 0.0135	0.0685 ± 0.1294 ± 0.0207
	0.840 – 1.200	2.56	0.121	0.418	0.908	0.478	0.849	-0.1690 ± 0.2671 ± 0.0135	-0.1442 ± 0.1384 ± 0.0204
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.82	0.114	0.481	0.338	0.111	0.799	-0.1047 ± 0.1483 ± 0.0065	-0.0547 ± 0.0809 ± 0.0138
	0.170 – 0.250	2.69	0.103	0.529	0.340	0.211	0.745	0.2674 ± 0.1414 ± 0.0043	0.1452 ± 0.0782 ± 0.0132
	0.250 – 0.310	2.59	0.095	0.563	0.343	0.280	0.705	0.0223 ± 0.1542 ± 0.0116	0.0540 ± 0.0856 ± 0.0133
	0.310 – 0.380	2.49	0.088	0.591	0.347	0.345	0.668	-0.0348 ± 0.1472 ± 0.0057	-0.0785 ± 0.0840 ± 0.0132
	0.310 – 0.380	2.49	0.088	0.591	0.347	0.345	0.668	-0.0348 ± 0.1472 ± 0.0057	-0.0785 ± 0.0840 ± 0.0132
	0.380 – 0.520	2.39	0.081	0.624	0.353	0.446	0.625	0.0433 ± 0.0773 ± 0.0097	0.0353 ± 0.0534 ± 0.0149
	0.520 – 0.690	2.30	0.074	0.652	0.371	0.595	0.587	-0.0428 ± 0.0665 ± 0.0117	-0.0308 ± 0.0508 ± 0.0155
	0.690 – 2.000	2.27	0.071	0.675	0.428	0.849	0.554	0.0987 ± 0.0638 ± 0.0075	0.0929 ± 0.0512 ± 0.0141

Table 39. One-dimensionally binned SFA and CSA amplitudes of the $\cos(\phi - \phi_S)$ modulation for π^0 as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin		Average kinematics						π^-	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(\phi - \phi_S)/\sqrt{1-\epsilon^2} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(\phi - \phi_S) \rangle_{\mathrm{L}\perp}$
x	0.023 – 0.046	1.29	0.036	0.704	0.330	0.481	0.524	0.0362 ± 0.0266 ± 0.0080	0.0317 ± 0.0225 ± 0.0066
	0.046 – 0.067	1.64	0.056	0.568	0.350	0.402	0.699	0.0182 ± 0.0310 ± 0.0166	0.0104 ± 0.0224 ± 0.0100
	0.067 – 0.082	1.98	0.074	0.515	0.359	0.369	0.752	0.0691 ± 0.0443 ± 0.0207	0.0436 ± 0.0296 ± 0.0115
	0.082 – 0.105	2.33	0.093	0.487	0.366	0.354	0.779	0.1324 ± 0.0433 ± 0.0220	0.0773 ± 0.0277 ± 0.0110
	0.082 – 0.105	2.33	0.093	0.487	0.366	0.354	0.779	0.1324 ± 0.0433 ± 0.0220	0.0773 ± 0.0277 ± 0.0110
	0.105 – 0.134	2.86	0.118	0.468	0.369	0.348	0.797	0.0659 ± 0.0488 ± 0.0298	0.0442 ± 0.0304 ± 0.0158
	0.134 – 0.186	3.66	0.156	0.454	0.369	0.342	0.813	-0.0308 ± 0.0520 ± 0.0349	-0.0167 ± 0.0321 ± 0.0188
	0.186 – 0.600	5.66	0.253	0.434	0.364	0.349	0.835	0.0076 ± 0.0624 ± 0.0529	0.0001 ± 0.0391 ± 0.0279
z	0.200 – 0.260	2.39	0.084	0.598	0.229	0.350	0.656	0.0224 ± 0.0251 ± 0.0147	0.0079 ± 0.0186 ± 0.0091
	0.260 – 0.320	2.38	0.091	0.559	0.289	0.379	0.698	0.0808 ± 0.0304 ± 0.0205	0.0509 ± 0.0215 ± 0.0117
	0.320 – 0.380	2.36	0.094	0.536	0.348	0.403	0.721	-0.0206 ± 0.0370 ± 0.0276	0.0080 ± 0.0252 ± 0.0154
	0.380 – 0.450	2.37	0.097	0.521	0.413	0.422	0.738	0.0372 ± 0.0435 ± 0.0248	0.0215 ± 0.0284 ± 0.0122
	0.450 – 0.520	2.35	0.098	0.509	0.483	0.437	0.751	0.1106 ± 0.0543 ± 0.0274	0.0823 ± 0.0344 ± 0.0132
	0.450 – 0.520	2.35	0.098	0.509	0.483	0.437	0.751	0.1106 ± 0.0543 ± 0.0274	0.0823 ± 0.0344 ± 0.0132
	0.520 – 0.600	2.31	0.098	0.498	0.558	0.449	0.764	0.0658 ± 0.0644 ± 0.0256	0.0309 ± 0.0390 ± 0.0124
	0.600 – 0.700	2.27	0.099	0.479	0.646	0.438	0.787	0.0326 ± 0.0762 ± 0.0261	0.0300 ± 0.0441 ± 0.0127
	0.700 – 0.760	2.19	0.099	0.452	0.729	0.416	0.818	-0.0238 ± 0.1296 ± 0.0236	0.0009 ± 0.0697 ± 0.0135
	0.760 – 0.840	2.15	0.101	0.432	0.798	0.389	0.839	0.0252 ± 0.1315 ± 0.0145	0.0445 ± 0.0691 ± 0.0073
	0.840 – 1.200	2.08	0.104	0.399	0.906	0.338	0.868	-0.1717 ± 0.1342 ± 0.0095	-0.1051 ± 0.0669 ± 0.0067
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.48	0.107	0.462	0.337	0.110	0.811	-0.0120 ± 0.0461 ± 0.0066	0.0046 ± 0.0261 ± 0.0019
	0.170 – 0.250	2.47	0.103	0.492	0.345	0.211	0.775	0.0062 ± 0.0503 ± 0.0167	0.0058 ± 0.0287 ± 0.0078
	0.250 – 0.310	2.43	0.098	0.520	0.350	0.280	0.743	0.0496 ± 0.0554 ± 0.0159	0.0202 ± 0.0330 ± 0.0069
	0.310 – 0.380	2.36	0.092	0.546	0.349	0.345	0.714	0.0887 ± 0.0443 ± 0.0204	0.0645 ± 0.0295 ± 0.0110
	0.310 – 0.380	2.36	0.092	0.546	0.349	0.345	0.714	0.0887 ± 0.0443 ± 0.0204	0.0645 ± 0.0295 ± 0.0110
	0.380 – 0.520	2.30	0.086	0.576	0.347	0.446	0.678	0.0428 ± 0.0292 ± 0.0177	0.0280 ± 0.0212 ± 0.0112
	0.520 – 0.690	2.28	0.081	0.606	0.359	0.594	0.640	0.0485 ± 0.0322 ± 0.0167	0.0343 ± 0.0248 ± 0.0123
	0.690 – 2.000	2.26	0.076	0.643	0.409	0.846	0.594	0.0541 ± 0.0389 ± 0.0149	0.0416 ± 0.0313 ± 0.0114

Table 40. One-dimensionally binned SFA and CSA amplitudes of the $\cos(\phi - \phi_S)$ modulation for π^- as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin		Average kinematics						K^+	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(\phi - \phi_S)/\sqrt{1-\epsilon^2} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(\phi - \phi_S) \rangle_{\mathrm{L}\perp}$
x	0.023 – 0.046	1.29	0.036	0.704	0.363	0.527	0.524	0.0351 ± 0.0636 ± 0.0225	0.0399 ± 0.0540 ± 0.0216
	0.046 – 0.067	1.65	0.056	0.571	0.384	0.436	0.696	0.0729 ± 0.0719 ± 0.0170	0.0470 ± 0.0518 ± 0.0131
	0.067 – 0.082	2.01	0.074	0.524	0.392	0.398	0.743	0.2512 ± 0.0997 ± 0.0078	0.1252 ± 0.0666 ± 0.0071
	0.082 – 0.105	2.39	0.093	0.498	0.401	0.378	0.769	0.0437 ± 0.0945 ± 0.0032	0.0497 ± 0.0603 ± 0.0004
	0.082 – 0.105	2.39	0.093	0.498	0.401	0.378	0.769	0.0437 ± 0.0945 ± 0.0032	0.0497 ± 0.0603 ± 0.0004
	0.105 – 0.134	2.93	0.118	0.479	0.404	0.366	0.788	-0.1597 ± 0.1048 ± 0.0162	-0.0782 ± 0.0644 ± 0.0058
	0.134 – 0.186	3.79	0.157	0.468	0.408	0.358	0.801	0.0799 ± 0.1049 ± 0.0390	0.0243 ± 0.0644 ± 0.0154
	0.186 – 0.600	5.86	0.252	0.451	0.410	0.357	0.822	-0.0059 ± 0.1153 ± 0.0979	-0.0159 ± 0.0707 ± 0.0412
z	0.200 – 0.260	2.46	0.085	0.603	0.228	0.351	0.652	0.0372 ± 0.0673 ± 0.0291	0.0243 ± 0.0510 ± 0.0229
	0.260 – 0.320	2.49	0.092	0.569	0.287	0.378	0.688	-0.0018 ± 0.0711 ± 0.0362	-0.0086 ± 0.0509 ± 0.0263
	0.320 – 0.380	2.53	0.097	0.548	0.347	0.403	0.711	0.1659 ± 0.0786 ± 0.0371	0.1445 ± 0.0535 ± 0.0238
	0.380 – 0.450	2.56	0.101	0.532	0.412	0.425	0.730	0.1643 ± 0.0885 ± 0.0411	0.1147 ± 0.0571 ± 0.0233
	0.450 – 0.520	2.55	0.102	0.522	0.482	0.458	0.739	0.1100 ± 0.1033 ± 0.0448	0.0555 ± 0.0649 ± 0.0211
	0.450 – 0.520	2.55	0.102	0.522	0.482	0.458	0.739	0.1100 ± 0.1033 ± 0.0448	0.0555 ± 0.0649 ± 0.0211
	0.520 – 0.600	2.54	0.104	0.515	0.556	0.484	0.748	0.0150 ± 0.1108 ± 0.0524	-0.0501 ± 0.0679 ± 0.0207
	0.600 – 0.700	2.61	0.108	0.500	0.645	0.506	0.766	0.1723 ± 0.1247 ± 0.0548	0.0705 ± 0.0733 ± 0.0170
	0.700 – 0.760	2.63	0.112	0.474	0.727	0.506	0.797	-0.0681 ± 0.2047 ± 0.0500	-0.0418 ± 0.1145 ± 0.0138
	0.760 – 0.840	2.62	0.116	0.448	0.796	0.501	0.825	0.0336 ± 0.2105 ± 0.0408	0.0325 ± 0.1131 ± 0.0075
	0.840 – 1.200	2.47	0.119	0.411	0.903	0.469	0.858	0.2213 ± 0.2346 ± 0.0290	0.1314 ± 0.1192 ± 0.0037
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.68	0.113	0.468	0.362	0.111	0.807	0.2224 ± 0.0996 ± 0.0716	0.1231 ± 0.0572 ± 0.0351
	0.170 – 0.250	2.66	0.109	0.495	0.372	0.211	0.775	0.1058 ± 0.1101 ± 0.1103	0.0737 ± 0.0642 ± 0.0523
	0.250 – 0.310	2.66	0.106	0.517	0.377	0.280	0.750	0.1139 ± 0.1261 ± 0.0991	0.0548 ± 0.0747 ± 0.0504
	0.310 – 0.380	2.56	0.099	0.540	0.381	0.345	0.723	0.1458 ± 0.1067 ± 0.0552	0.0946 ± 0.0686 ± 0.0354
	0.310 – 0.380	2.56	0.099	0.540	0.381	0.345	0.723	0.1458 ± 0.1067 ± 0.0552	0.0946 ± 0.0686 ± 0.0354
	0.380 – 0.520	2.49	0.093	0.565	0.387	0.447	0.692	-0.0203 ± 0.0706 ± 0.0135	-0.0337 ± 0.0494 ± 0.0131
	0.520 – 0.690	2.41	0.087	0.593	0.402	0.597	0.658	-0.0888 ± 0.0711 ± 0.0107	-0.0578 ± 0.0526 ± 0.0064
	0.690 – 2.000	2.29	0.076	0.642	0.451	0.867	0.597	0.1863 ± 0.0718 ± 0.0197	0.1494 ± 0.0568 ± 0.0150

Table 41. One-dimensionally binned SFA and CSA amplitudes of the $\cos(\phi - \phi_S)$ modulation for K^+ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin		Average kinematics						K^-	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(\phi - \phi_S)/\sqrt{1-\epsilon^2} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(\phi - \phi_S) \rangle_{\mathrm{L}\perp}$
x	0.023 – 0.046	1.30	0.036	0.711	0.338	0.503	0.513	-0.1244 ± 0.0805 ± 0.0023	-0.0998 ± 0.0690 ± 0.0068
	0.046 – 0.067	1.67	0.056	0.578	0.355	0.417	0.687	-0.0517 ± 0.0985 ± 0.0066	-0.0291 ± 0.0729 ± 0.0105
	0.067 – 0.082	2.04	0.074	0.533	0.361	0.381	0.734	0.1546 ± 0.1449 ± 0.0143	0.1031 ± 0.0983 ± 0.0138
	0.082 – 0.105	2.44	0.093	0.510	0.367	0.367	0.758	-0.0612 ± 0.1417 ± 0.0164	-0.0294 ± 0.0932 ± 0.0115
	0.082 – 0.105	2.44	0.093	0.510	0.367	0.367	0.758	-0.0612 ± 0.1417 ± 0.0164	-0.0294 ± 0.0932 ± 0.0115
	0.105 – 0.134	3.01	0.118	0.493	0.366	0.362	0.775	-0.1389 ± 0.1612 ± 0.0346	-0.1220 ± 0.1037 ± 0.0205
	0.134 – 0.186	3.89	0.157	0.480	0.365	0.356	0.790	0.2424 ± 0.1680 ± 0.0368	0.1608 ± 0.1075 ± 0.0190
	0.186 – 0.600	5.82	0.251	0.451	0.363	0.364	0.821	0.4360 ± 0.2109 ± 0.0549	0.2709 ± 0.1330 ± 0.0345
z	0.200 – 0.260	2.41	0.082	0.616	0.227	0.362	0.636	0.0498 ± 0.0836 ± 0.0027	0.0603 ± 0.0649 ± 0.0063
	0.260 – 0.320	2.41	0.087	0.582	0.287	0.389	0.673	0.0253 ± 0.0943 ± 0.0061	0.0248 ± 0.0697 ± 0.0078
	0.320 – 0.380	2.40	0.091	0.557	0.347	0.419	0.701	0.1537 ± 0.1167 ± 0.0059	0.1150 ± 0.0813 ± 0.0108
	0.380 – 0.450	2.37	0.092	0.542	0.411	0.440	0.718	-0.1477 ± 0.1333 ± 0.0010	-0.0827 ± 0.0887 ± 0.0166
	0.450 – 0.520	2.29	0.091	0.534	0.482	0.460	0.726	-0.3997 ± 0.1647 ± 0.0171	-0.2334 ± 0.1065 ± 0.0264
	0.450 – 0.520	2.29	0.091	0.534	0.482	0.460	0.726	-0.3997 ± 0.1647 ± 0.0171	-0.2334 ± 0.1065 ± 0.0264
	0.520 – 0.600	2.34	0.093	0.531	0.556	0.465	0.729	0.0766 ± 0.1905 ± 0.0431	0.0971 ± 0.1222 ± 0.0392
	0.600 – 0.700	2.33	0.094	0.520	0.642	0.493	0.744	-0.0016 ± 0.2485 ± 0.0667	0.0004 ± 0.1531 ± 0.0446
	0.700 – 0.760	2.28	0.093	0.506	0.726	0.500	0.766	0.0012 ± 0.5312 ± 0.0696	-0.0910 ± 0.3057 ± 0.0398
	0.760 – 0.840	2.30	0.096	0.482	0.793	0.464	0.795	-0.0555 ± 0.7288 ± 0.0868	-0.0694 ± 0.4109 ± 0.0482
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.47	0.103	0.477	0.337	0.111	0.797	0.2040 ± 0.1534 ± 0.0399	0.0974 ± 0.0896 ± 0.0185
	0.170 – 0.250	2.48	0.100	0.513	0.346	0.210	0.756	0.3714 ± 0.1677 ± 0.0507	0.1641 ± 0.0988 ± 0.0260
	0.250 – 0.310	2.48	0.096	0.540	0.346	0.280	0.724	-0.1092 ± 0.1895 ± 0.0705	0.0142 ± 0.1165 ± 0.0417
	0.310 – 0.380	2.39	0.089	0.566	0.351	0.345	0.692	-0.0545 ± 0.1545 ± 0.0637	-0.0665 ± 0.1050 ± 0.0440
	0.310 – 0.380	2.39	0.089	0.566	0.351	0.345	0.692	-0.0545 ± 0.1545 ± 0.0637	-0.0665 ± 0.1050 ± 0.0440
	0.380 – 0.520	2.32	0.084	0.592	0.348	0.447	0.661	0.1051 ± 0.0979 ± 0.0566	0.0817 ± 0.0725 ± 0.0466
	0.520 – 0.690	2.31	0.080	0.620	0.358	0.597	0.625	-0.0905 ± 0.0990 ± 0.0466	-0.0485 ± 0.0775 ± 0.0442
	0.690 – 2.000	2.26	0.073	0.661	0.409	0.856	0.572	-0.2065 ± 0.1075 ± 0.0342	-0.1493 ± 0.0878 ± 0.0391

Table 42. One-dimensionally binned SFA and CSA amplitudes of the $\cos(\phi - \phi_S)$ modulation for K^- as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin		Average kinematics						p	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(\phi - \phi_S)/\sqrt{1-\epsilon^2} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(\phi - \phi_S) \rangle_{\mathrm{L}\perp}$
x	0.023 – 0.040	1.24	0.033	0.738	0.354	0.550	0.475	-0.0079 ± 0.0839 ± 0.0008	-0.0045 ± 0.0726 ± 0.0017
	0.040 – 0.057	1.54	0.048	0.619	0.395	0.490	0.640	0.0157 ± 0.0833 ± 0.0109	0.0126 ± 0.0644 ± 0.0079
	0.057 – 0.075	1.90	0.066	0.561	0.424	0.447	0.706	0.1319 ± 0.0993 ± 0.0095	0.1053 ± 0.0697 ± 0.0060
	0.075 – 0.098	2.36	0.086	0.533	0.439	0.430	0.735	-0.0274 ± 0.1073 ± 0.0262	-0.0424 ± 0.0711 ± 0.0148
	0.075 – 0.098	2.36	0.086	0.533	0.439	0.430	0.735	-0.0274 ± 0.1073 ± 0.0262	-0.0424 ± 0.0711 ± 0.0148
	0.098 – 0.136	3.06	0.115	0.514	0.449	0.406	0.757	-0.0068 ± 0.1033 ± 0.0321	-0.0083 ± 0.0660 ± 0.0140
	0.136 – 0.185	4.04	0.158	0.496	0.457	0.390	0.777	0.0872 ± 0.1255 ± 0.0250	0.0605 ± 0.0786 ± 0.0032
	0.185 – 0.600	6.13	0.257	0.464	0.471	0.383	0.811	-0.0094 ± 0.1311 ± 0.0172	-0.0239 ± 0.0798 ± 0.0045
z	0.200 – 0.270	2.30	0.062	0.739	0.239	0.477	0.477	0.0693 ± 0.0835 ± 0.0154	0.0536 ± 0.0718 ± 0.0139
	0.270 – 0.340	2.57	0.081	0.643	0.306	0.456	0.613	0.1090 ± 0.0755 ± 0.0181	0.0778 ± 0.0585 ± 0.0123
	0.340 – 0.410	2.64	0.093	0.583	0.375	0.443	0.683	-0.0283 ± 0.0851 ± 0.0069	-0.0004 ± 0.0586 ± 0.0086
	0.410 – 0.470	2.66	0.102	0.544	0.439	0.446	0.723	-0.0057 ± 0.1046 ± 0.0275	0.0025 ± 0.0670 ± 0.0201
	0.470 – 0.530	2.68	0.109	0.512	0.499	0.435	0.757	0.0237 ± 0.1192 ± 0.0358	0.0341 ± 0.0721 ± 0.0236
	0.470 – 0.530	2.68	0.109	0.512	0.499	0.435	0.757	0.0237 ± 0.1192 ± 0.0358	0.0341 ± 0.0721 ± 0.0236
	0.530 – 0.610	2.64	0.113	0.485	0.567	0.452	0.781	-0.2067 ± 0.1285 ± 0.0435	-0.0903 ± 0.0758 ± 0.0268
	0.610 – 0.700	2.63	0.119	0.455	0.650	0.463	0.810	-0.0007 ± 0.1649 ± 0.0412	0.0021 ± 0.0922 ± 0.0263
	0.700 – 0.780	2.57	0.123	0.423	0.735	0.477	0.841	0.2763 ± 0.2595 ± 0.0515	0.1888 ± 0.1371 ± 0.0324
	0.780 – 0.880	2.54	0.130	0.389	0.821	0.490	0.872	-0.3328 ± 0.4124 ± 0.0297	-0.2034 ± 0.2051 ± 0.0241
	0.880 – 1.200	2.45	0.136	0.353	0.938	0.505	0.900	0.1653 ± 0.7910 ± 0.0825	0.3139 ± 0.3773 ± 0.0462
$P_{h\perp}$ [GeV]	0.000 – 0.230	2.88	0.113	0.510	0.435	0.150	0.765	0.0546 ± 0.0961 ± 0.0094	0.0274 ± 0.0575 ± 0.0033
	0.230 – 0.340	2.76	0.106	0.543	0.427	0.286	0.723	-0.0759 ± 0.1079 ± 0.0364	-0.0501 ± 0.0642 ± 0.0130
	0.340 – 0.430	2.62	0.097	0.569	0.416	0.385	0.691	0.2400 ± 0.1087 ± 0.0487	0.1330 ± 0.0718 ± 0.0271
	0.430 – 0.520	2.54	0.091	0.590	0.413	0.474	0.666	-0.0414 ± 0.1042 ± 0.0494	-0.0071 ± 0.0744 ± 0.0342
	0.430 – 0.520	2.54	0.091	0.590	0.413	0.474	0.666	-0.0414 ± 0.1042 ± 0.0494	-0.0071 ± 0.0744 ± 0.0342
	0.520 – 0.620	2.44	0.085	0.608	0.406	0.568	0.644	0.0686 ± 0.0991 ± 0.0403	0.0334 ± 0.0742 ± 0.0288
	0.620 – 0.740	2.35	0.080	0.620	0.405	0.676	0.628	0.0607 ± 0.1055 ± 0.0369	0.0426 ± 0.0809 ± 0.0289
	0.740 – 2.000	2.31	0.078	0.633	0.432	0.904	0.609	-0.1372 ± 0.0973 ± 0.0339	-0.0661 ± 0.0765 ± 0.0305

Table 43. One-dimensionally binned SFA and CSA amplitudes of the $\cos(\phi - \phi_S)$ modulation for p as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin		Average kinematics						$\bar{p}$	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(\phi - \phi_S)/\sqrt{1-\epsilon^2} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(\phi - \phi_S) \rangle_{\mathrm{L}\perp}$
x	0.023 – 0.040	1.26	0.032	0.759	0.335	0.539	0.442	-0.2053 ± 0.1493 ± 0.0075	-0.1883 ± 0.1340 ± 0.0048
	0.040 – 0.057	1.65	0.048	0.666	0.360	0.492	0.579	-0.3706 ± 0.1796 ± 0.0503	-0.2277 ± 0.1480 ± 0.0310
	0.057 – 0.075	2.12	0.065	0.628	0.372	0.472	0.626	0.3073 ± 0.2128 ± 0.0778	0.2260 ± 0.1680 ± 0.0437
	0.075 – 0.098	2.69	0.085	0.608	0.377	0.450	0.655	-0.0151 ± 0.2661 ± 0.1082	-0.0097 ± 0.2026 ± 0.0594
	0.075 – 0.098	2.69	0.085	0.608	0.377	0.450	0.655	-0.0151 ± 0.2661 ± 0.1082	-0.0097 ± 0.2026 ± 0.0594
	0.098 – 0.136	3.48	0.115	0.588	0.385	0.429	0.678	-0.1536 ± 0.2764 ± 0.1178	-0.1182 ± 0.1992 ± 0.0656
	0.136 – 0.185	4.58	0.158	0.562	0.385	0.399	0.712	-0.2119 ± 0.3848 ± 0.1079	-0.1552 ± 0.2624 ± 0.0644
	0.185 – 0.600	6.60	0.243	0.531	0.406	0.383	0.748	-0.3878 ± 0.4243 ± 0.0985	-0.2468 ± 0.2745 ± 0.0640
z	0.200 – 0.270	2.25	0.060	0.750	0.238	0.471	0.459	-0.2623 ± 0.1563 ± 0.0546	-0.2076 ± 0.1387 ± 0.0505
	0.270 – 0.340	2.48	0.074	0.679	0.304	0.476	0.562	-0.2589 ± 0.1440 ± 0.0775	-0.2104 ± 0.1198 ± 0.0636
	0.340 – 0.410	2.43	0.079	0.634	0.373	0.482	0.618	-0.1167 ± 0.1949 ± 0.0734	-0.0773 ± 0.1480 ± 0.0493
	0.410 – 0.470	2.43	0.085	0.595	0.437	0.470	0.665	0.5239 ± 0.2915 ± 0.0480	0.2860 ± 0.2116 ± 0.0226
	0.470 – 0.530	2.41	0.085	0.583	0.498	0.478	0.678	0.6276 ± 0.3450 ± 0.0047	0.4391 ± 0.2429 ± 0.0195
	0.470 – 0.530	2.41	0.085	0.583	0.498	0.478	0.678	0.6276 ± 0.3450 ± 0.0047	0.4391 ± 0.2429 ± 0.0195
	0.530 – 0.610	2.26	0.083	0.567	0.563	0.492	0.698	-0.1539 ± 0.4734 ± 0.0402	-0.0868 ± 0.3262 ± 0.0519
	0.610 – 0.700	2.40	0.095	0.527	0.645	0.502	0.745	0.2031 ± 0.6532 ± 0.1058	0.1937 ± 0.3846 ± 0.0979
$P_{h\perp}$ [GeV]	0.000 – 0.230	2.79	0.097	0.586	0.378	0.151	0.683	-0.2655 ± 0.2753 ± 0.0023	-0.1101 ± 0.1844 ± 0.0229
	0.230 – 0.340	2.53	0.083	0.630	0.364	0.288	0.622	-0.9064 ± 0.3412 ± 0.0558	-0.6680 ± 0.2375 ± 0.0076
	0.340 – 0.430	2.37	0.075	0.652	0.358	0.385	0.592	-0.2405 ± 0.2576 ± 0.1342	-0.1441 ± 0.2022 ± 0.0694
	0.430 – 0.520	2.35	0.073	0.667	0.351	0.475	0.572	-0.1536 ± 0.2082 ± 0.1470	-0.1454 ± 0.1704 ± 0.1013
	0.430 – 0.520	2.35	0.073	0.667	0.351	0.475	0.572	-0.1536 ± 0.2082 ± 0.1470	-0.1454 ± 0.1704 ± 0.1013
	0.520 – 0.620	2.30	0.070	0.678	0.355	0.569	0.557	0.2377 ± 0.2067 ± 0.1142	0.2253 ± 0.1707 ± 0.0850
	0.620 – 0.740	2.21	0.066	0.687	0.355	0.675	0.544	-0.2195 ± 0.2135 ± 0.0922	-0.1239 ± 0.1789 ± 0.0714
	0.740 – 2.000	2.12	0.062	0.698	0.386	0.886	0.527	-0.0332 ± 0.2165 ± 0.0585	0.0023 ± 0.1850 ± 0.0476

Table 44. One-dimensionally binned SFA and CSA amplitudes of the $\cos(\phi - \phi_S)$ modulation for $\bar{p}$ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin			Average kinematics						π^+	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(\phi - \phi_S)/\sqrt{1-\epsilon^2} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(\phi - \phi_S) \rangle_{\mathrm{L}\perp}$
0.023 – 0.072	0.20 – 0.28	0.00 – 0.23	1.46	0.052	0.561	0.236	0.151	0.708	-0.1136 ± 0.1087 ± 0.0103	-0.1136 ± 0.1087 ± 0.0103
		0.23 – 0.36	1.51	0.048	0.632	0.235	0.298	0.619	0.1045 ± 0.0591 ± 0.0078	0.1045 ± 0.0591 ± 0.0078
		0.36 – 0.54	1.54	0.046	0.673	0.237	0.443	0.564	-0.0080 ± 0.0411 ± 0.0034	-0.0080 ± 0.0411 ± 0.0034
		0.54 – 2.00	1.59	0.043	0.730	0.242	0.655	0.483	-0.0186 ± 0.0566 ± 0.0010	-0.0186 ± 0.0566 ± 0.0010
	0.28 – 0.37	0.00 – 0.23	1.43	0.054	0.525	0.320	0.150	0.750	0.1407 ± 0.1277 ± 0.0143	0.1407 ± 0.1277 ± 0.0143
		0.23 – 0.36	1.48	0.050	0.595	0.320	0.297	0.665	-0.2767 ± 0.1960 ± 0.0125	-0.2767 ± 0.1960 ± 0.0125
		0.36 – 0.54	1.52	0.047	0.640	0.320	0.449	0.607	0.0433 ± 0.0578 ± 0.0090	0.0433 ± 0.0578 ± 0.0090
		0.54 – 2.00	1.56	0.045	0.692	0.323	0.699	0.536	-0.0015 ± 0.0506 ± 0.0045	-0.0015 ± 0.0506 ± 0.0045
	0.37 – 0.49	0.00 – 0.23	1.40	0.055	0.504	0.422	0.151	0.775	0.1100 ± 0.1536 ± 0.0081	0.1100 ± 0.1536 ± 0.0081
		0.23 – 0.36	1.45	0.051	0.563	0.422	0.298	0.705	-0.1354 ± 0.2342 ± 0.0136	-0.1354 ± 0.2342 ± 0.0136
		0.36 – 0.54	1.49	0.049	0.609	0.423	0.447	0.648	0.1081 ± 0.1459 ± 0.0113	0.1081 ± 0.1459 ± 0.0113
		0.54 – 2.00	1.54	0.046	0.668	0.425	0.747	0.569	0.0233 ± 0.0527 ± 0.0020	0.0233 ± 0.0527 ± 0.0020
	0.49 – 0.70	0.00 – 0.23	1.38	0.056	0.488	0.579	0.151	0.793	0.1019 ± 0.1820 ± 0.0132	0.1019 ± 0.1820 ± 0.0132
		0.23 – 0.36	1.41	0.053	0.529	0.578	0.298	0.745	-0.5464 ± 0.2163 ± 0.0154	-0.5464 ± 0.2163 ± 0.0154
		0.36 – 0.54	1.45	0.051	0.571	0.577	0.448	0.695	-0.1279 ± 0.2378 ± 0.0159	-0.1279 ± 0.2378 ± 0.0159
		0.54 – 2.00	1.51	0.048	0.633	0.577	0.786	0.618	0.0539 ± 0.0722 ± 0.0117	0.0539 ± 0.0722 ± 0.0117
0.072 – 0.098	0.20 – 0.28	0.00 – 0.23	2.10	0.084	0.484	0.239	0.140	0.792	0.0828 ± 0.1237 ± 0.0076	0.0828 ± 0.1237 ± 0.0076
		0.23 – 0.36	2.39	0.084	0.550	0.238	0.295	0.721	0.0456 ± 0.1320 ± 0.0010	0.0456 ± 0.1320 ± 0.0010
		0.36 – 0.54	2.47	0.084	0.572	0.239	0.441	0.692	-0.0446 ± 0.0864 ± 0.0096	-0.0446 ± 0.0864 ± 0.0096
		0.54 – 2.00	2.73	0.084	0.633	0.244	0.643	0.620	0.0964 ± 0.1417 ± 0.0041	0.0964 ± 0.1417 ± 0.0041
	0.28 – 0.37	0.00 – 0.23	1.89	0.084	0.434	0.321	0.142	0.834	-0.1338 ± 0.1376 ± 0.0172	-0.1338 ± 0.1376 ± 0.0172
		0.23 – 0.36	2.14	0.084	0.492	0.322	0.293	0.778	0.1285 ± 0.2249 ± 0.0026	0.1285 ± 0.2249 ± 0.0026
		0.36 – 0.54	2.30	0.084	0.530	0.321	0.444	0.736	-0.1381 ± 0.1203 ± 0.0159	-0.1381 ± 0.1203 ± 0.0159
		0.54 – 2.00	2.51	0.084	0.581	0.325	0.676	0.678	-0.0153 ± 0.1121 ± 0.0164	-0.0153 ± 0.1121 ± 0.0164
	0.37 – 0.49	0.00 – 0.23	1.83	0.085	0.420	0.423	0.146	0.846	-0.0244 ± 0.1651 ± 0.0172	-0.0244 ± 0.1651 ± 0.0172
		0.23 – 0.36	1.99	0.085	0.455	0.424	0.293	0.812	-0.3172 ± 0.2047 ± 0.0190	-0.3172 ± 0.2047 ± 0.0190
		0.36 – 0.54	2.18	0.084	0.502	0.425	0.443	0.766	0.1016 ± 0.2267 ± 0.0095	0.1016 ± 0.2267 ± 0.0095
		0.54 – 2.00	2.38	0.084	0.551	0.427	0.719	0.711	-0.2071 ± 0.1189 ± 0.0185	-0.2071 ± 0.1189 ± 0.0185
	0.49 – 0.70	0.00 – 0.23	1.78	0.085	0.407	0.578	0.148	0.857	0.2177 ± 0.2007 ± 0.0111	0.2177 ± 0.2007 ± 0.0111
		0.23 – 0.36	1.87	0.085	0.427	0.580	0.295	0.838	0.0012 ± 0.2016 ± 0.0170	0.0012 ± 0.2016 ± 0.0170
		0.36 – 0.54	2.02	0.084	0.463	0.583	0.443	0.806	-0.1725 ± 0.2352 ± 0.0053	-0.1725 ± 0.2352 ± 0.0053
		0.54 – 2.00	2.29	0.084	0.530	0.583	0.754	0.736	-0.1504 ± 0.1489 ± 0.0098	-0.1504 ± 0.1489 ± 0.0098
0.098 – 0.138	0.20 – 0.28	0.00 – 0.23	2.86	0.116	0.477	0.239	0.139	0.799	-0.0054 ± 0.1116 ± 0.0161	-0.0054 ± 0.1116 ± 0.0161
		0.23 – 0.36	3.18	0.116	0.532	0.239	0.292	0.742	0.0490 ± 0.1485 ± 0.0160	0.0490 ± 0.1485 ± 0.0160
		0.36 – 0.54	3.26	0.115	0.547	0.239	0.441	0.721	0.0703 ± 0.1035 ± 0.0084	0.0703 ± 0.1035 ± 0.0084
		0.54 – 2.00	3.53	0.115	0.593	0.244	0.638	0.670	0.3758 ± 0.1796 ± 0.0138	0.3758 ± 0.1796 ± 0.0138
	0.28 – 0.37	0.00 – 0.23	2.53	0.116	0.422	0.322	0.143	0.843	0.1413 ± 0.1262 ± 0.0211	0.1413 ± 0.1262 ± 0.0211
		0.23 – 0.36	2.81	0.116	0.469	0.323	0.291	0.799	0.2990 ± 0.1750 ± 0.0035	0.2990 ± 0.1750 ± 0.0035
		0.36 – 0.54	3.03	0.116	0.508	0.322	0.442	0.759	0.0213 ± 0.1435 ± 0.0139	0.0213 ± 0.1435 ± 0.0139
		0.54 – 2.00	3.21	0.115	0.539	0.325	0.672	0.725	-0.0175 ± 0.1440 ± 0.0134	-0.0175 ± 0.1440 ± 0.0134
	0.37 – 0.49	0.00 – 0.23	2.41	0.116	0.402	0.423	0.148	0.857	-0.2202 ± 0.1546 ± 0.0211	-0.2202 ± 0.1546 ± 0.0211
		0.23 – 0.36	2.51	0.116	0.418	0.426	0.293	0.841	0.1390 ± 0.1679 ± 0.0130	0.1390 ± 0.1679 ± 0.0130
		0.36 – 0.54	2.84	0.116	0.475	0.427	0.441	0.791	-0.2166 ± 0.2062 ± 0.0047	-0.2166 ± 0.2062 ± 0.0047
		0.54 – 2.00	3.11	0.116	0.521	0.427	0.716	0.741	-0.1955 ± 0.1378 ± 0.0209	-0.1955 ± 0.1378 ± 0.0209
	0.49 – 0.70	0.00 – 0.23	2.38	0.116	0.398	0.577	0.151	0.862	0.2449 ± 0.1863 ± 0.0152	0.2449 ± 0.1863 ± 0.0152
		0.23 – 0.36	2.40	0.116	0.400	0.579	0.296	0.858	-0.0951 ± 0.1813 ± 0.0234	-0.0951 ± 0.1813 ± 0.0234
		0.36 – 0.54	2.55	0.116	0.426	0.582	0.441	0.835	0.2502 ± 0.1853 ± 0.0224	0.2502 ± 0.1853 ± 0.0224
		0.54 – 2.00	2.98	0.115	0.500	0.584	0.742	0.765	0.2274 ± 0.1650 ± 0.0185	0.2274 ± 0.1650 ± 0.0185
0.138 – 0.600	0.20 – 0.28	0.00 – 0.23	4.95	0.205	0.467	0.239	0.141	0.811	0.0035 ± 0.0895 ± 0.0225	0.0035 ± 0.0895 ± 0.0225
		0.23 – 0.36	5.26	0.214	0.486	0.241	0.290	0.790	0.0358 ± 0.1193 ± 0.0225	0.0358 ± 0.1193 ± 0.0225
		0.36 – 0.54	5.21	0.207	0.497	0.240	0.440	0.776	0.0724 ± 0.1348 ± 0.0352	0.0724 ± 0.1348 ± 0.0352
		0.54 – 2.00	5.42	0.209	0.515	0.244	0.637	0.759	0.1334 ± 0.2999 ± 0.0397	0.1334 ± 0.2999 ± 0.0397
	0.28 – 0.37	0.00 – 0.23	4.48	0.201	0.428	0.321	0.147	0.841	0.2227 ± 0.1058 ± 0.0223	0.2227 ± 0.1058 ± 0.0223
		0.23 – 0.36	4.64	0.210	0.430	0.323	0.292	0.835	0.0210 ± 0.1250 ± 0.0325	0.0210 ± 0.1250 ± 0.0325
		0.36 – 0.54	4.89	0.211	0.457	0.324	0.439	0.810	0.0478 ± 0.1368 ± 0.0424	0.0478 ± 0.1368 ± 0.0424
		0.54 – 2.00	4.93	0.205	0.474	0.325	0.671	0.793	0.0517 ± 0.1812 ± 0.0351	0.0517 ± 0.1812 ± 0.0351
	0.37 – 0.49	0.00 – 0.23	4.38	0.201	0.419	0.422	0.150	0.847	0.3109 ± 0.1263 ± 0.0243	0.3109 ± 0.1263 ± 0.0243
		0.23 – 0.36	4.38	0.205	0.413	0.424	0.294	0.850	-0.0863 ± 0.1368 ± 0.0288	-0.0863 ± 0.1368 ± 0.0288
		0.36 – 0.54	4.65	0.210	0.432	0.427	0.438	0.832	0.1229 ± 0.1398 ± 0.0397	0.1229 ± 0.1398 ± 0.0397
		0.54 – 2.00	4.84	0.205	0.466	0.427	0.704	0.799	0.3427 ± 0.1561 ± 0.0327	0.3427 ± 0.1561 ± 0.0327
	0.49 – 0.70	0.00 – 0.23	4.33	0.200	0.414	0.575	0.153	0.852	0.0799 ± 0.1549 ± 0.0316	0.0799 ± 0.1549 ± 0.0316
		0.23 – 0.36	4.28	0.200	0.410	0.577	0.296	0.852	-0.0351 ± 0.1510 ± 0.0238	-0.0351 ± 0.1510 ± 0.0238
		0.36 – 0.54	4.41	0.206	0.413	0.580	0.444	0.848	0.2255 ± 0.1445 ± 0.0361	0.2255 ± 0.1445 ± 0.0361
		0.54 – 2.00	4.82	0.209	0.454	0.587	0.723	0.811	0.1244 ± 0.1457 ± 0.0404	0.1244 ± 0.1457 ± 0.0404

Table 45. Three-dimensionally binned SFA and CSA amplitudes of the $\cos(\phi - \phi_S)$ modulation for π^+ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin			Average kinematics						π^-	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(\phi - \phi_S)/\sqrt{1-\epsilon^2} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(\phi - \phi_S) \rangle_{\mathrm{L}\perp}$
0.023 – 0.072	0.20 – 0.28	0.00 – 0.23	1.46	0.052	0.561	0.236	0.152	0.709	-0.0145 ± 0.1237 ± 0.0121	-0.0145 ± 0.1237 ± 0.0121
		0.23 – 0.36	1.51	0.047	0.636	0.234	0.298	0.613	-0.0493 ± 0.0665 ± 0.0079	-0.0493 ± 0.0665 ± 0.0079
		0.36 – 0.54	1.53	0.045	0.674	0.236	0.443	0.561	0.0809 ± 0.0458 ± 0.0025	0.0809 ± 0.0458 ± 0.0025
		0.54 – 2.00	1.58	0.043	0.729	0.241	0.658	0.483	0.0473 ± 0.0626 ± 0.0040	0.0473 ± 0.0626 ± 0.0040
	0.28 – 0.37	0.00 – 0.23	1.43	0.054	0.527	0.320	0.150	0.748	0.2112 ± 0.1457 ± 0.0095	0.2112 ± 0.1457 ± 0.0095
		0.23 – 0.36	1.48	0.049	0.597	0.320	0.296	0.662	-0.2845 ± 0.2319 ± 0.0287	-0.2845 ± 0.2319 ± 0.0287
		0.36 – 0.54	1.50	0.047	0.643	0.319	0.449	0.603	-0.0124 ± 0.0659 ± 0.0074	-0.0124 ± 0.0659 ± 0.0074
		0.54 – 2.00	1.55	0.045	0.692	0.323	0.703	0.536	0.0366 ± 0.0564 ± 0.0030	0.0366 ± 0.0564 ± 0.0030
	0.37 – 0.49	0.00 – 0.23	1.40	0.055	0.505	0.422	0.152	0.774	-0.0116 ± 0.1786 ± 0.0014	-0.0116 ± 0.1786 ± 0.0014
		0.23 – 0.36	1.45	0.051	0.566	0.423	0.298	0.701	0.1006 ± 0.2722 ± 0.0219	0.1006 ± 0.2722 ± 0.0219
		0.36 – 0.54	1.49	0.048	0.615	0.423	0.448	0.640	-0.1263 ± 0.1570 ± 0.0294	-0.1263 ± 0.1570 ± 0.0294
		0.54 – 2.00	1.53	0.046	0.669	0.424	0.749	0.568	-0.0253 ± 0.0640 ± 0.0098	-0.0253 ± 0.0640 ± 0.0098
	0.49 – 0.70	0.00 – 0.23	1.37	0.056	0.487	0.579	0.151	0.794	-0.0380 ± 0.2009 ± 0.0074	-0.0380 ± 0.2009 ± 0.0074
		0.23 – 0.36	1.41	0.053	0.532	0.580	0.298	0.743	0.1581 ± 0.2502 ± 0.0244	0.1581 ± 0.2502 ± 0.0244
		0.36 – 0.54	1.44	0.050	0.575	0.578	0.446	0.691	0.0043 ± 0.2886 ± 0.0275	0.0043 ± 0.2886 ± 0.0275
		0.54 – 2.00	1.51	0.047	0.638	0.573	0.785	0.611	0.0550 ± 0.0859 ± 0.0157	0.0550 ± 0.0859 ± 0.0157
0.072 – 0.098	0.20 – 0.28	0.00 – 0.23	2.10	0.084	0.484	0.239	0.140	0.791	0.0510 ± 0.1385 ± 0.0188	0.0510 ± 0.1385 ± 0.0188
		0.23 – 0.36	2.37	0.084	0.547	0.237	0.294	0.724	0.1359 ± 0.1488 ± 0.0129	0.1359 ± 0.1488 ± 0.0129
		0.36 – 0.54	2.46	0.084	0.569	0.238	0.440	0.695	0.1288 ± 0.0988 ± 0.0127	0.1288 ± 0.0988 ± 0.0127
		0.54 – 2.00	2.72	0.083	0.632	0.244	0.644	0.622	-0.0423 ± 0.1593 ± 0.0139	-0.0423 ± 0.1593 ± 0.0139
	0.28 – 0.37	0.00 – 0.23	1.88	0.084	0.432	0.321	0.142	0.836	-0.0431 ± 0.1637 ± 0.0358	-0.0431 ± 0.1637 ± 0.0358
		0.23 – 0.36	2.13	0.084	0.490	0.322	0.292	0.779	-0.1359 ± 0.2649 ± 0.0441	-0.1359 ± 0.2649 ± 0.0441
		0.36 – 0.54	2.26	0.084	0.523	0.320	0.445	0.742	0.2604 ± 0.1431 ± 0.0256	0.2604 ± 0.1431 ± 0.0256
		0.54 – 2.00	2.48	0.084	0.575	0.324	0.678	0.685	0.1057 ± 0.1306 ± 0.0205	0.1057 ± 0.1306 ± 0.0205
	0.37 – 0.49	0.00 – 0.23	1.82	0.084	0.418	0.423	0.146	0.847	0.1292 ± 0.1941 ± 0.0246	0.1292 ± 0.1941 ± 0.0246
		0.23 – 0.36	1.95	0.084	0.448	0.424	0.292	0.819	0.4037 ± 0.2418 ± 0.0134	0.4037 ± 0.2418 ± 0.0134
		0.36 – 0.54	2.17	0.084	0.502	0.424	0.442	0.767	-0.2115 ± 0.2731 ± 0.0272	-0.2115 ± 0.2731 ± 0.0272
		0.54 – 2.00	2.37	0.084	0.546	0.425	0.724	0.715	0.2631 ± 0.1398 ± 0.0194	0.2631 ± 0.1398 ± 0.0194
	0.49 – 0.70	0.00 – 0.23	1.78	0.084	0.407	0.579	0.148	0.856	-0.1782 ± 0.2333 ± 0.0170	-0.1782 ± 0.2333 ± 0.0170
		0.23 – 0.36	1.85	0.084	0.425	0.581	0.295	0.840	-0.2489 ± 0.2411 ± 0.0289	-0.2489 ± 0.2411 ± 0.0289
		0.36 – 0.54	2.00	0.084	0.461	0.582	0.442	0.808	-0.1325 ± 0.2801 ± 0.0260	-0.1325 ± 0.2801 ± 0.0260
		0.54 – 2.00	2.26	0.084	0.524	0.580	0.751	0.743	-0.0705 ± 0.1919 ± 0.0318	-0.0705 ± 0.1919 ± 0.0318
0.098 – 0.138	0.20 – 0.28	0.00 – 0.23	2.86	0.116	0.477	0.239	0.138	0.799	-0.0174 ± 0.1276 ± 0.0224	-0.0174 ± 0.1276 ± 0.0224
		0.23 – 0.36	3.17	0.116	0.531	0.238	0.292	0.743	0.0978 ± 0.1670 ± 0.0255	0.0978 ± 0.1670 ± 0.0255
		0.36 – 0.54	3.25	0.115	0.545	0.239	0.442	0.724	-0.1497 ± 0.1244 ± 0.0245	-0.1497 ± 0.1244 ± 0.0245
		0.54 – 2.00	3.54	0.116	0.593	0.244	0.645	0.671	0.0542 ± 0.2188 ± 0.0229	0.0542 ± 0.2188 ± 0.0229
	0.28 – 0.37	0.00 – 0.23	2.52	0.116	0.420	0.321	0.144	0.844	0.0154 ± 0.1539 ± 0.0094	0.0154 ± 0.1539 ± 0.0094
		0.23 – 0.36	2.77	0.116	0.462	0.323	0.291	0.806	0.2222 ± 0.2111 ± 0.0393	0.2222 ± 0.2111 ± 0.0393
		0.36 – 0.54	2.98	0.116	0.500	0.322	0.444	0.766	0.0528 ± 0.1639 ± 0.0217	0.0528 ± 0.1639 ± 0.0217
		0.54 – 2.00	3.17	0.116	0.532	0.324	0.675	0.732	0.3966 ± 0.1680 ± 0.0155	0.3966 ± 0.1680 ± 0.0155
	0.37 – 0.49	0.00 – 0.23	2.39	0.116	0.399	0.422	0.148	0.860	-0.0475 ± 0.1922 ± 0.0249	-0.0475 ± 0.1922 ± 0.0249
		0.23 – 0.36	2.48	0.116	0.413	0.425	0.293	0.845	0.4820 ± 0.2079 ± 0.0478	0.4820 ± 0.2079 ± 0.0478
		0.36 – 0.54	2.80	0.116	0.467	0.426	0.441	0.797	0.1890 ± 0.2494 ± 0.0440	0.1890 ± 0.2494 ± 0.0440
		0.54 – 2.00	3.00	0.115	0.504	0.424	0.716	0.756	0.1332 ± 0.1660 ± 0.0427	0.1332 ± 0.1660 ± 0.0427
	0.49 – 0.70	0.00 – 0.23	2.37	0.116	0.396	0.579	0.150	0.863	0.0398 ± 0.2232 ± 0.0219	0.0398 ± 0.2232 ± 0.0219
		0.23 – 0.36	2.39	0.116	0.399	0.577	0.295	0.859	0.2165 ± 0.2294 ± 0.0309	0.2165 ± 0.2294 ± 0.0309
		0.36 – 0.54	2.55	0.116	0.426	0.583	0.441	0.834	0.2662 ± 0.2341 ± 0.0417	0.2662 ± 0.2341 ± 0.0417
		0.54 – 2.00	2.92	0.115	0.490	0.581	0.747	0.774	0.0493 ± 0.2060 ± 0.0483	0.0493 ± 0.2060 ± 0.0483
0.138 – 0.600	0.20 – 0.28	0.00 – 0.23	4.91	0.204	0.467	0.239	0.141	0.811	-0.1140 ± 0.1089 ± 0.0234	-0.1140 ± 0.1089 ± 0.0234
		0.23 – 0.36	5.22	0.212	0.486	0.240	0.290	0.790	0.1167 ± 0.1421 ± 0.0434	0.1167 ± 0.1421 ± 0.0434
		0.36 – 0.54	5.18	0.205	0.499	0.239	0.443	0.775	-0.1481 ± 0.1565 ± 0.0392	-0.1481 ± 0.1565 ± 0.0392
		0.54 – 2.00	5.40	0.211	0.509	0.243	0.645	0.767	-0.4047 ± 0.3663 ± 0.0372	-0.4047 ± 0.3663 ± 0.0372
	0.28 – 0.37	0.00 – 0.23	4.41	0.199	0.426	0.321	0.148	0.842	-0.2537 ± 0.1321 ± 0.0334	-0.2537 ± 0.1321 ± 0.0334
		0.23 – 0.36	4.55	0.208	0.426	0.322	0.291	0.839	0.0006 ± 0.1583 ± 0.0583	0.0006 ± 0.1583 ± 0.0583
		0.36 – 0.54	4.80	0.211	0.450	0.323	0.440	0.816	0.1268 ± 0.1694 ± 0.0644	0.1268 ± 0.1694 ± 0.0644
		0.54 – 2.00	4.79	0.204	0.464	0.324	0.679	0.802	0.1029 ± 0.2268 ± 0.0657	0.1029 ± 0.2268 ± 0.0657
	0.37 – 0.49	0.00 – 0.23	4.26	0.197	0.414	0.422	0.149	0.852	0.2009 ± 0.1665 ± 0.0261	0.2009 ± 0.1665 ± 0.0261
		0.23 – 0.36	4.31	0.203	0.410	0.424	0.294	0.852	-0.0310 ± 0.1719 ± 0.0377	-0.0310 ± 0.1719 ± 0.0377
		0.36 – 0.54	4.59	0.212	0.423	0.425	0.438	0.840	-0.0376 ± 0.1894 ± 0.0570	-0.0376 ± 0.1894 ± 0.0570
		0.54 – 2.00	4.78	0.208	0.453	0.426	0.712	0.809	-0.2376 ± 0.1962 ± 0.0777	-0.2376 ± 0.1962 ± 0.0777
	0.49 – 0.70	0.00 – 0.23	4.25	0.197	0.413	0.574	0.152	0.852	0.0210 ± 0.2038 ± 0.0261	0.0210 ± 0.2038 ± 0.0261
		0.23 – 0.36	4.13	0.198	0.400	0.574	0.295	0.861	0.1731 ± 0.2024 ± 0.0414	0.1731 ± 0.2024 ± 0.0414
		0.36 – 0.54	4.25	0.203	0.405	0.579	0.443	0.855	0.2220 ± 0.1933 ± 0.0524	0.2220 ± 0.1933 ± 0.0524
		0.54 – 2.00	4.67	0.210	0.437	0.581	0.726	0.825	0.0008 ± 0.2017 ± 0.0505	0.0008 ± 0.2017 ± 0.0505

Table 46. Three-dimensionally binned SFA and CSA amplitudes of the $\cos(\phi - \phi_S)$ modulation for π^- as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin			Average kinematics						K^+	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(\phi - \phi_S)/\sqrt{1-\epsilon^2} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(\phi - \phi_S) \rangle_{\mathrm{L}\perp}$
0.023 – 0.072	0.20 – 0.28	0.00 – 0.23	1.48	0.052	0.565	0.239	0.149	0.705	0.1719 ± 0.3246 ± 0.0214	0.1719 ± 0.3246 ± 0.0214
		0.23 – 0.36	1.54	0.048	0.638	0.237	0.297	0.612	0.3766 ± 0.1876 ± 0.0031	0.3766 ± 0.1876 ± 0.0031
		0.36 – 0.54	1.55	0.046	0.674	0.239	0.444	0.562	0.0142 ± 0.1228 ± 0.0027	0.0142 ± 0.1228 ± 0.0027
		0.54 – 2.00	1.59	0.043	0.734	0.242	0.670	0.476	-0.1828 ± 0.1513 ± 0.0042	-0.1828 ± 0.1513 ± 0.0042
	0.28 – 0.37	0.00 – 0.23	1.44	0.054	0.529	0.321	0.150	0.747	0.2350 ± 0.3425 ± 0.0033	0.2350 ± 0.3425 ± 0.0033
		0.23 – 0.36	1.51	0.050	0.603	0.322	0.298	0.657	0.3943 ± 0.5633 ± 0.0584	0.3943 ± 0.5633 ± 0.0584
		0.36 – 0.54	1.54	0.047	0.645	0.322	0.448	0.601	0.2055 ± 0.1570 ± 0.0075	0.2055 ± 0.1570 ± 0.0075
		0.54 – 2.00	1.56	0.044	0.701	0.326	0.722	0.523	0.0457 ± 0.1256 ± 0.0078	0.0457 ± 0.1256 ± 0.0078
	0.37 – 0.49	0.00 – 0.23	1.43	0.055	0.511	0.422	0.148	0.769	0.2798 ± 0.3537 ± 0.0152	0.2798 ± 0.3537 ± 0.0152
		0.23 – 0.36	1.47	0.052	0.557	0.424	0.297	0.713	0.8164 ± 0.5876 ± 0.0553	0.8164 ± 0.5876 ± 0.0553
		0.36 – 0.54	1.51	0.050	0.608	0.424	0.449	0.651	0.2603 ± 0.3421 ± 0.0333	0.2603 ± 0.3421 ± 0.0333
		0.54 – 2.00	1.56	0.046	0.671	0.428	0.763	0.565	-0.0478 ± 0.1300 ± 0.0098	-0.0478 ± 0.1300 ± 0.0098
	0.49 – 0.70	0.00 – 0.23	1.42	0.057	0.493	0.572	0.150	0.787	1.0583 ± 0.5067 ± 0.0070	1.0583 ± 0.5067 ± 0.0070
		0.23 – 0.36	1.44	0.054	0.534	0.573	0.298	0.740	-0.0519 ± 0.5517 ± 0.0242	-0.0519 ± 0.5517 ± 0.0242
		0.36 – 0.54	1.49	0.051	0.587	0.576	0.452	0.675	0.2616 ± 0.5582 ± 0.0016	0.2616 ± 0.5582 ± 0.0016
		0.54 – 2.00	1.53	0.048	0.637	0.580	0.805	0.612	0.2521 ± 0.1426 ± 0.0131	0.2521 ± 0.1426 ± 0.0131
0.072 – 0.098	0.20 – 0.28	0.00 – 0.23	2.21	0.084	0.508	0.241	0.142	0.770	0.3974 ± 0.3897 ± 0.0080	0.3974 ± 0.3897 ± 0.0080
		0.23 – 0.36	2.43	0.084	0.562	0.240	0.295	0.709	-0.8414 ± 0.3412 ± 0.0004	-0.8414 ± 0.3412 ± 0.0004
		0.36 – 0.54	2.50	0.084	0.578	0.241	0.440	0.683	0.0150 ± 0.2694 ± 0.0060	0.0150 ± 0.2694 ± 0.0060
		0.54 – 2.00	2.72	0.084	0.630	0.244	0.652	0.624	-0.0264 ± 0.4009 ± 0.0141	-0.0264 ± 0.4009 ± 0.0141
	0.28 – 0.37	0.00 – 0.23	1.98	0.084	0.455	0.323	0.142	0.816	0.3390 ± 0.3352 ± 0.0267	0.3390 ± 0.3352 ± 0.0267
		0.23 – 0.36	2.21	0.084	0.510	0.324	0.293	0.762	1.0314 ± 0.5689 ± 0.0303	1.0314 ± 0.5689 ± 0.0303
		0.36 – 0.54	2.38	0.084	0.550	0.324	0.446	0.714	-0.0608 ± 0.3331 ± 0.0220	-0.0608 ± 0.3331 ± 0.0220
		0.54 – 2.00	2.54	0.084	0.587	0.327	0.690	0.669	0.3580 ± 0.2685 ± 0.0100	0.3580 ± 0.2685 ± 0.0100
	0.37 – 0.49	0.00 – 0.23	1.88	0.085	0.429	0.423	0.145	0.839	-0.1082 ± 0.3658 ± 0.0390	-0.1082 ± 0.3658 ± 0.0390
		0.23 – 0.36	2.07	0.084	0.475	0.425	0.294	0.795	0.6400 ± 0.5283 ± 0.0258	0.6400 ± 0.5283 ± 0.0258
		0.36 – 0.54	2.23	0.084	0.512	0.427	0.445	0.758	1.0847 ± 0.7136 ± 0.0105	1.0847 ± 0.7136 ± 0.0105
		0.54 – 2.00	2.44	0.084	0.566	0.430	0.735	0.695	0.2407 ± 0.2683 ± 0.0207	0.2407 ± 0.2683 ± 0.0207
	0.49 – 0.70	0.00 – 0.23	1.88	0.085	0.427	0.577	0.150	0.842	-0.9105 ± 0.4412 ± 0.0334	-0.9105 ± 0.4412 ± 0.0334
		0.23 – 0.36	1.94	0.084	0.447	0.575	0.297	0.820	0.6877 ± 0.4601 ± 0.0437	0.6877 ± 0.4601 ± 0.0437
		0.36 – 0.54	2.06	0.085	0.470	0.583	0.446	0.798	-1.0568 ± 0.5226 ± 0.0307	-1.0568 ± 0.5226 ± 0.0307
		0.54 – 2.00	2.33	0.084	0.538	0.587	0.768	0.728	0.2338 ± 0.3248 ± 0.0045	0.2338 ± 0.3248 ± 0.0045
0.098 – 0.138	0.20 – 0.28	0.00 – 0.23	2.96	0.116	0.494	0.241	0.139	0.785	-0.0631 ± 0.3471 ± 0.0287	-0.0631 ± 0.3471 ± 0.0287
		0.23 – 0.36	3.31	0.116	0.554	0.239	0.290	0.718	-0.6246 ± 0.4496 ± 0.0087	-0.6246 ± 0.4496 ± 0.0087
		0.36 – 0.54	3.25	0.115	0.548	0.240	0.443	0.720	0.1550 ± 0.3142 ± 0.0169	0.1550 ± 0.3142 ± 0.0169
		0.54 – 2.00	3.53	0.115	0.596	0.245	0.650	0.664	-0.1755 ± 0.4987 ± 0.0249	-0.1755 ± 0.4987 ± 0.0249
	0.28 – 0.37	0.00 – 0.23	2.64	0.116	0.441	0.324	0.142	0.829	-0.1969 ± 0.3102 ± 0.0246	-0.1969 ± 0.3102 ± 0.0246
		0.23 – 0.36	2.91	0.116	0.485	0.326	0.292	0.787	0.0228 ± 0.4905 ± 0.0023	0.0228 ± 0.4905 ± 0.0023
		0.36 – 0.54	3.08	0.115	0.519	0.323	0.446	0.746	-0.5738 ± 0.3531 ± 0.0242	-0.5738 ± 0.3531 ± 0.0242
		0.54 – 2.00	3.20	0.116	0.535	0.327	0.682	0.726	-0.0981 ± 0.3549 ± 0.0074	-0.0981 ± 0.3549 ± 0.0074
	0.37 – 0.49	0.00 – 0.23	2.54	0.116	0.425	0.424	0.148	0.841	0.8186 ± 0.3417 ± 0.0372	0.8186 ± 0.3417 ± 0.0372
		0.23 – 0.36	2.66	0.116	0.441	0.427	0.291	0.824	0.1969 ± 0.3979 ± 0.0387	0.1969 ± 0.3979 ± 0.0387
		0.36 – 0.54	3.00	0.117	0.497	0.428	0.442	0.773	-1.1876 ± 0.5201 ± 0.0249	-1.1876 ± 0.5201 ± 0.0249
		0.54 – 2.00	3.21	0.115	0.539	0.428	0.716	0.723	0.2118 ± 0.3157 ± 0.0042	0.2118 ± 0.3157 ± 0.0042
	0.49 – 0.70	0.00 – 0.23	2.47	0.116	0.412	0.574	0.150	0.851	-0.4384 ± 0.4278 ± 0.0059	-0.4384 ± 0.4278 ± 0.0059
		0.23 – 0.36	2.50	0.116	0.418	0.577	0.296	0.845	0.3857 ± 0.4392 ± 0.0379	0.3857 ± 0.4392 ± 0.0379
		0.36 – 0.54	2.70	0.116	0.451	0.583	0.443	0.815	-0.1323 ± 0.4059 ± 0.0588	-0.1323 ± 0.4059 ± 0.0588
		0.54 – 2.00	3.06	0.115	0.514	0.588	0.752	0.752	0.1888 ± 0.3384 ± 0.0289	0.1888 ± 0.3384 ± 0.0289
0.138 – 0.600	0.20 – 0.28	0.00 – 0.23	5.15	0.207	0.485	0.242	0.138	0.795	0.7056 ± 0.2687 ± 0.0813	0.7056 ± 0.2687 ± 0.0813
		0.23 – 0.36	5.33	0.208	0.505	0.243	0.292	0.773	0.1865 ± 0.4147 ± 0.0941	0.1865 ± 0.4147 ± 0.0941
		0.36 – 0.54	5.06	0.196	0.508	0.241	0.445	0.765	-0.2756 ± 0.4196 ± 0.0554	-0.2756 ± 0.4196 ± 0.0554
		0.54 – 2.00	5.22	0.211	0.493	0.246	0.645	0.779	-1.2325 ± 0.8302 ± 0.0388	-1.2325 ± 0.8302 ± 0.0388
	0.28 – 0.37	0.00 – 0.23	4.76	0.204	0.449	0.323	0.142	0.825	0.1988 ± 0.2469 ± 0.0625	0.1988 ± 0.2469 ± 0.0625
		0.23 – 0.36	5.01	0.211	0.462	0.325	0.289	0.810	-0.0673 ± 0.3043 ± 0.1122	-0.0673 ± 0.3043 ± 0.1122
		0.36 – 0.54	5.04	0.203	0.488	0.325	0.443	0.783	-0.0363 ± 0.3456 ± 0.0937	-0.0363 ± 0.3456 ± 0.0937
		0.54 – 2.00	4.69	0.198	0.464	0.327	0.681	0.798	-0.3854 ± 0.4388 ± 0.0603	-0.3854 ± 0.4388 ± 0.0603
	0.37 – 0.49	0.00 – 0.23	4.63	0.204	0.435	0.424	0.150	0.836	0.2969 ± 0.2790 ± 0.0675	0.2969 ± 0.2790 ± 0.0675
		0.23 – 0.36	4.62	0.204	0.437	0.425	0.292	0.831	-0.3775 ± 0.2973 ± 0.0809	-0.3775 ± 0.2973 ± 0.0809
		0.36 – 0.54	4.91	0.210	0.458	0.426	0.439	0.812	-0.1158 ± 0.3151 ± 0.1210	-0.1158 ± 0.3151 ± 0.1210
		0.54 – 2.00	5.02	0.204	0.483	0.428	0.707	0.784	0.4479 ± 0.3607 ± 0.0674	0.4479 ± 0.3607 ± 0.0674
	0.49 – 0.70	0.00 – 0.23	4.55	0.204	0.426	0.576	0.149	0.843	-0.3610 ± 0.3324 ± 0.0779	-0.3610 ± 0.3324 ± 0.0779
		0.23 – 0.36	4.52	0.206	0.422	0.577	0.296	0.844	0.0993 ± 0.3302 ± 0.0760	0.0993 ± 0.3302 ± 0.0760
		0.36 – 0.54	4.63	0.207	0.435	0.583	0.443	0.831	0.1562 ± 0.2736 ± 0.0872	0.1562 ± 0.2736 ± 0.0872
		0.54 – 2.00	5.06	0.210	0.473	0.589	0.731	0.796	0.1475 ± 0.2965 ± 0.0827	0.1475 ± 0.2965 ± 0.0827

Table 47. Three-dimensionally binned SFA and CSA amplitudes of the $\cos(\phi - \phi_S)$ modulation for K^+ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin			Average kinematics						K^-	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(\phi - \phi_S)/\sqrt{1-\epsilon^2} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(\phi - \phi_S) \rangle_{\mathrm{L}\perp}$
0.023 – 0.072	0.20 – 0.28	0.00 – 0.23	1.48	0.051	0.575	0.236	0.152	0.692	-0.1979 ± 0.4086 ± 0.0104	-0.1979 ± 0.4086 ± 0.0104
		0.23 – 0.36	1.51	0.047	0.646	0.236	0.298	0.601	-0.0851 ± 0.2374 ± 0.0064	-0.0851 ± 0.2374 ± 0.0064
		0.36 – 0.54	1.54	0.045	0.684	0.237	0.444	0.547	-0.0559 ± 0.1528 ± 0.0003	-0.0559 ± 0.1528 ± 0.0003
		0.54 – 2.00	1.61	0.043	0.744	0.242	0.666	0.461	-0.2312 ± 0.1851 ± 0.0142	-0.2312 ± 0.1851 ± 0.0142
	0.28 – 0.37	0.00 – 0.23	1.45	0.053	0.537	0.319	0.151	0.738	0.4079 ± 0.4476 ± 0.0157	0.4079 ± 0.4476 ± 0.0157
		0.23 – 0.36	1.50	0.049	0.608	0.320	0.296	0.650	0.3853 ± 0.6288 ± 0.0225	0.3853 ± 0.6288 ± 0.0225
		0.36 – 0.54	1.51	0.047	0.644	0.319	0.449	0.602	0.3311 ± 0.2101 ± 0.0078	0.3311 ± 0.2101 ± 0.0078
		0.54 – 2.00	1.56	0.044	0.701	0.324	0.724	0.523	-0.0047 ± 0.1705 ± 0.0168	-0.0047 ± 0.1705 ± 0.0168
	0.37 – 0.49	0.00 – 0.23	1.40	0.054	0.513	0.424	0.146	0.768	-0.4183 ± 0.5313 ± 0.0029	-0.4183 ± 0.5313 ± 0.0029
		0.23 – 0.36	1.48	0.051	0.579	0.422	0.298	0.689	-0.6101 ± 0.8969 ± 0.0022	-0.6101 ± 0.8969 ± 0.0022
		0.36 – 0.54	1.53	0.049	0.622	0.423	0.448	0.633	-0.3678 ± 0.4550 ± 0.0255	-0.3678 ± 0.4550 ± 0.0255
		0.54 – 2.00	1.54	0.045	0.674	0.425	0.770	0.562	-0.2495 ± 0.1832 ± 0.0026	-0.2495 ± 0.1832 ± 0.0026
	0.49 – 0.70	0.00 – 0.23	1.41	0.055	0.508	0.562	0.151	0.771	0.5168 ± 0.6135 ± 0.0077	0.5168 ± 0.6135 ± 0.0077
		0.23 – 0.36	1.44	0.052	0.550	0.566	0.298	0.721	-0.1524 ± 0.7828 ± 0.0196	-0.1524 ± 0.7828 ± 0.0196
		0.36 – 0.54	1.49	0.050	0.595	0.572	0.446	0.664	0.7049 ± 0.8898 ± 0.0124	0.7049 ± 0.8898 ± 0.0124
		0.54 – 2.00	1.53	0.046	0.662	0.569	0.799	0.578	-0.5521 ± 0.2369 ± 0.0144	-0.5521 ± 0.2369 ± 0.0144
0.072 – 0.098	0.20 – 0.28	0.00 – 0.23	2.18	0.084	0.503	0.239	0.139	0.775	0.5021 ± 0.5392 ± 0.0193	0.5021 ± 0.5392 ± 0.0193
		0.23 – 0.36	2.46	0.084	0.568	0.237	0.294	0.701	-0.6403 ± 0.5694 ± 0.0249	-0.6403 ± 0.5694 ± 0.0249
		0.36 – 0.54	2.54	0.084	0.586	0.237	0.440	0.677	0.0274 ± 0.3486 ± 0.0256	0.0274 ± 0.3486 ± 0.0256
		0.54 – 2.00	2.75	0.084	0.637	0.242	0.648	0.614	0.1292 ± 0.5110 ± 0.0373	0.1292 ± 0.5110 ± 0.0373
	0.28 – 0.37	0.00 – 0.23	1.95	0.084	0.448	0.323	0.138	0.824	0.1329 ± 0.4825 ± 0.0105	0.1329 ± 0.4825 ± 0.0105
		0.23 – 0.36	2.24	0.084	0.518	0.322	0.292	0.752	1.8855 ± 0.9220 ± 0.0068	1.8855 ± 0.9220 ± 0.0068
		0.36 – 0.54	2.40	0.084	0.555	0.321	0.444	0.712	-0.5784 ± 0.4777 ± 0.0271	-0.5784 ± 0.4777 ± 0.0271
		0.54 – 2.00	2.48	0.084	0.573	0.324	0.693	0.689	-0.2167 ± 0.3891 ± 0.0052	-0.2167 ± 0.3891 ± 0.0052
	0.37 – 0.49	0.00 – 0.23	1.84	0.084	0.426	0.424	0.143	0.842	0.3816 ± 0.6279 ± 0.0219	0.3816 ± 0.6279 ± 0.0219
		0.23 – 0.36	2.06	0.084	0.475	0.424	0.294	0.794	-0.3234 ± 0.7449 ± 0.0640	-0.3234 ± 0.7449 ± 0.0640
		0.36 – 0.54	2.27	0.083	0.528	0.424	0.443	0.743	-0.3900 ± 0.8285 ± 0.0051	-0.3900 ± 0.8285 ± 0.0051
		0.54 – 2.00	2.45	0.084	0.566	0.423	0.727	0.695	-0.5674 ± 0.4489 ± 0.0281	-0.5674 ± 0.4489 ± 0.0281
	0.49 – 0.70	0.00 – 0.23	1.89	0.085	0.431	0.567	0.150	0.837	-1.0574 ± 0.8866 ± 0.0212	-1.0574 ± 0.8866 ± 0.0212
		0.23 – 0.36	2.00	0.085	0.455	0.570	0.295	0.811	0.7866 ± 0.7984 ± 0.0382	0.7866 ± 0.7984 ± 0.0382
		0.36 – 0.54	2.16	0.084	0.495	0.577	0.440	0.775	1.2530 ± 0.8290 ± 0.0345	1.2530 ± 0.8290 ± 0.0345
		0.54 – 2.00	2.42	0.084	0.556	0.570	0.772	0.707	0.3505 ± 0.5891 ± 0.0037	0.3505 ± 0.5891 ± 0.0037
0.098 – 0.138	0.20 – 0.28	0.00 – 0.23	3.02	0.116	0.505	0.240	0.138	0.774	0.7233 ± 0.4477 ± 0.0082	0.7233 ± 0.4477 ± 0.0082
		0.23 – 0.36	3.26	0.115	0.549	0.241	0.290	0.727	-0.3958 ± 0.6778 ± 0.0196	-0.3958 ± 0.6778 ± 0.0196
		0.36 – 0.54	3.30	0.115	0.556	0.238	0.444	0.713	0.6364 ± 0.4405 ± 0.0281	0.6364 ± 0.4405 ± 0.0281
		0.54 – 2.00	3.61	0.115	0.607	0.243	0.649	0.655	-1.0009 ± 0.8797 ± 0.0245	-1.0009 ± 0.8797 ± 0.0245
	0.28 – 0.37	0.00 – 0.23	2.69	0.116	0.450	0.323	0.142	0.819	-0.0266 ± 0.5268 ± 0.0348	-0.0266 ± 0.5268 ± 0.0348
		0.23 – 0.36	2.98	0.116	0.501	0.322	0.294	0.769	-0.0869 ± 0.7369 ± 0.0463	-0.0869 ± 0.7369 ± 0.0463
		0.36 – 0.54	3.06	0.115	0.516	0.324	0.450	0.750	1.0056 ± 0.5906 ± 0.0349	1.0056 ± 0.5906 ± 0.0349
		0.54 – 2.00	3.34	0.116	0.559	0.324	0.694	0.703	0.8582 ± 0.5176 ± 0.0285	0.8582 ± 0.5176 ± 0.0285
	0.37 – 0.49	0.00 – 0.23	2.42	0.115	0.408	0.423	0.149	0.854	-1.0144 ± 0.5885 ± 0.0111	-1.0144 ± 0.5885 ± 0.0111
		0.23 – 0.36	2.69	0.117	0.447	0.427	0.293	0.819	0.3184 ± 0.6856 ± 0.0431	0.3184 ± 0.6856 ± 0.0431
		0.36 – 0.54	2.94	0.116	0.491	0.428	0.442	0.778	1.1926 ± 0.8772 ± 0.0444	1.1926 ± 0.8772 ± 0.0444
		0.54 – 2.00	3.19	0.114	0.540	0.424	0.741	0.723	-1.2338 ± 0.4871 ± 0.0528	-1.2338 ± 0.4871 ± 0.0528
	0.49 – 0.70	0.00 – 0.23	2.43	0.115	0.407	0.563	0.149	0.854	0.0243 ± 0.7832 ± 0.0080	0.0243 ± 0.7832 ± 0.0080
		0.23 – 0.36	2.47	0.115	0.416	0.572	0.295	0.848	-0.6934 ± 0.7785 ± 0.0031	-0.6934 ± 0.7785 ± 0.0031
		0.36 – 0.54	2.72	0.116	0.453	0.577	0.435	0.813	-0.0017 ± 0.7916 ± 0.0525	-0.0017 ± 0.7916 ± 0.0525
		0.54 – 2.00	3.08	0.115	0.517	0.574	0.764	0.750	-0.2121 ± 0.6825 ± 0.0636	-0.2121 ± 0.6825 ± 0.0636
0.138 – 0.600	0.20 – 0.28	0.00 – 0.23	4.98	0.201	0.481	0.241	0.144	0.800	0.1995 ± 0.3871 ± 0.0373	0.1995 ± 0.3871 ± 0.0373
		0.23 – 0.36	5.30	0.206	0.507	0.241	0.290	0.770	0.7475 ± 0.5477 ± 0.0953	0.7475 ± 0.5477 ± 0.0953
		0.36 – 0.54	5.32	0.204	0.518	0.239	0.449	0.757	0.3539 ± 0.5752 ± 0.0284	0.3539 ± 0.5752 ± 0.0284
		0.54 – 2.00	5.44	0.205	0.527	0.245	0.663	0.747	0.3555 ± 1.3009 ± 0.0533	0.3555 ± 1.3009 ± 0.0533
	0.28 – 0.37	0.00 – 0.23	4.71	0.203	0.451	0.322	0.146	0.822	0.7777 ± 0.4267 ± 0.0357	0.7777 ± 0.4267 ± 0.0357
		0.23 – 0.36	4.92	0.209	0.462	0.325	0.291	0.809	-0.1955 ± 0.4747 ± 0.1017	-0.1955 ± 0.4747 ± 0.1017
		0.36 – 0.54	4.90	0.205	0.473	0.325	0.441	0.795	-1.2773 ± 0.5526 ± 0.0598	-1.2773 ± 0.5526 ± 0.0598
		0.54 – 2.00	5.07	0.200	0.503	0.324	0.691	0.765	1.1807 ± 0.5876 ± 0.0445	1.1807 ± 0.5876 ± 0.0445
	0.37 – 0.49	0.00 – 0.23	4.35	0.195	0.430	0.420	0.149	0.839	-0.5776 ± 0.5499 ± 0.0078	-0.5776 ± 0.5499 ± 0.0078
		0.23 – 0.36	4.49	0.205	0.422	0.423	0.293	0.843	0.6421 ± 0.5664 ± 0.0516	0.6421 ± 0.5664 ± 0.0516
		0.36 – 0.54	4.75	0.207	0.450	0.426	0.437	0.817	0.3639 ± 0.5813 ± 0.1035	0.3639 ± 0.5813 ± 0.1035
		0.54 – 2.00	4.87	0.203	0.474	0.425	0.728	0.792	-0.5359 ± 0.6328 ± 0.0415	-0.5359 ± 0.6328 ± 0.0415
	0.49 – 0.70	0.00 – 0.23	4.39	0.196	0.432	0.562	0.154	0.839	0.4922 ± 0.6765 ± 0.0106	0.4922 ± 0.6765 ± 0.0106
		0.23 – 0.36	4.35	0.201	0.419	0.571	0.294	0.846	-0.3528 ± 0.8692 ± 0.0324	-0.3528 ± 0.8692 ± 0.0324
		0.36 – 0.54	4.56	0.207	0.429	0.577	0.440	0.838	0.3006 ± 0.6205 ± 0.0713	0.3006 ± 0.6205 ± 0.0713
		0.54 – 2.00	4.85	0.204	0.470	0.579	0.735	0.796	1.2411 ± 0.5310 ± 0.1007	1.2411 ± 0.5310 ± 0.1007

Table 48. Three-dimensionally binned SFA and CSA amplitudes of the $\cos(\phi - \phi_S)$ modulation for K^- as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin			Average kinematics						p	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(\phi - \phi_S)/\sqrt{1-\epsilon^2} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(\phi - \phi_S) \rangle_{\mathrm{L}\perp}$
0.023 – 0.073	0.20 – 0.34	0.00 – 0.24	1.60	0.048	0.656	0.281	0.167	0.598	0.5006 ± 0.4625 ± 0.0096	0.5006 ± 0.4625 ± 0.0096
		0.24 – 0.40	1.61	0.045	0.698	0.274	0.327	0.535	0.1914 ± 0.1719 ± 0.0065	0.1914 ± 0.1719 ± 0.0065
		0.40 – 0.57	1.60	0.044	0.713	0.271	0.483	0.512	0.0762 ± 0.1252 ± 0.0012	0.0762 ± 0.1252 ± 0.0012
		0.57 – 2.00	1.60	0.043	0.734	0.276	0.728	0.480	0.0445 ± 0.1205 ± 0.0046	0.0445 ± 0.1205 ± 0.0046
	0.34 – 0.43	0.00 – 0.24	1.48	0.053	0.544	0.384	0.157	0.736	0.5351 ± 0.3739 ± 0.0246	0.5351 ± 0.3739 ± 0.0246
		0.24 – 0.40	1.51	0.050	0.603	0.384	0.322	0.659	0.7905 ± 0.6008 ± 0.0454	0.7905 ± 0.6008 ± 0.0454
		0.40 – 0.57	1.54	0.049	0.632	0.383	0.483	0.620	0.0679 ± 0.2680 ± 0.0328	0.0679 ± 0.2680 ± 0.0328
		0.57 – 2.00	1.54	0.046	0.669	0.384	0.766	0.568	-0.3883 ± 0.1568 ± 0.0169	-0.3883 ± 0.1568 ± 0.0169
	0.43 – 0.52	0.00 – 0.24	1.43	0.056	0.503	0.473	0.159	0.777	-0.3798 ± 0.4330 ± 0.0287	-0.3798 ± 0.4330 ± 0.0287
		0.24 – 0.40	1.47	0.052	0.567	0.471	0.322	0.699	0.8834 ± 0.6244 ± 0.0521	0.8834 ± 0.6244 ± 0.0521
		0.40 – 0.57	1.50	0.050	0.597	0.472	0.481	0.663	0.1293 ± 0.5872 ± 0.0298	0.1293 ± 0.5872 ± 0.0298
		0.57 – 2.00	1.52	0.047	0.641	0.471	0.796	0.604	0.0359 ± 0.1995 ± 0.0290	0.0359 ± 0.1995 ± 0.0290
	0.52 – 0.70	0.00 – 0.24	1.40	0.057	0.487	0.588	0.153	0.795	-0.0187 ± 0.5115 ± 0.0304	-0.0187 ± 0.5115 ± 0.0304
		0.24 – 0.40	1.45	0.055	0.527	0.587	0.321	0.747	0.9864 ± 0.5428 ± 0.0045	0.9864 ± 0.5428 ± 0.0045
		0.40 – 0.57	1.46	0.052	0.561	0.589	0.482	0.707	0.0586 ± 0.6989 ± 0.0676	0.0586 ± 0.6989 ± 0.0676
		0.57 – 2.00	1.50	0.049	0.607	0.591	0.808	0.649	-0.4153 ± 0.2207 ± 0.0186	-0.4153 ± 0.2207 ± 0.0186
0.073 – 0.107	0.20 – 0.34	0.00 – 0.24	2.83	0.089	0.617	0.293	0.158	0.653	-0.2349 ± 0.4383 ± 0.0021	-0.2349 ± 0.4383 ± 0.0021
		0.24 – 0.40	2.91	0.088	0.638	0.285	0.321	0.624	0.3737 ± 0.6487 ± 0.0281	0.3737 ± 0.6487 ± 0.0281
		0.40 – 0.57	3.01	0.088	0.661	0.279	0.481	0.592	0.1328 ± 0.2544 ± 0.0021	0.1328 ± 0.2544 ± 0.0021
		0.57 – 2.00	3.03	0.088	0.666	0.282	0.718	0.584	-0.0021 ± 0.2928 ± 0.0018	-0.0021 ± 0.2928 ± 0.0018
	0.34 – 0.43	0.00 – 0.24	2.34	0.089	0.509	0.385	0.148	0.775	0.0557 ± 0.3912 ± 0.0050	0.0557 ± 0.3912 ± 0.0050
		0.24 – 0.40	2.49	0.088	0.545	0.385	0.317	0.732	0.0348 ± 0.5817 ± 0.0015	0.0348 ± 0.5817 ± 0.0015
		0.40 – 0.57	2.53	0.088	0.558	0.385	0.480	0.717	0.6299 ± 0.4924 ± 0.0160	0.6299 ± 0.4924 ± 0.0160
		0.57 – 2.00	2.63	0.088	0.575	0.385	0.744	0.694	0.1860 ± 0.3022 ± 0.0070	0.1860 ± 0.3022 ± 0.0070
	0.43 – 0.52	0.00 – 0.24	2.10	0.089	0.458	0.473	0.155	0.817	-0.3388 ± 0.4375 ± 0.0317	-0.3388 ± 0.4375 ± 0.0317
		0.24 – 0.40	2.22	0.088	0.485	0.473	0.319	0.789	-0.5836 ± 0.4994 ± 0.0095	-0.5836 ± 0.4994 ± 0.0095
		0.40 – 0.57	2.34	0.088	0.515	0.474	0.477	0.759	-0.2413 ± 0.6828 ± 0.0180	-0.2413 ± 0.6828 ± 0.0180
		0.57 – 2.00	2.45	0.088	0.538	0.472	0.773	0.731	-0.3083 ± 0.3882 ± 0.0182	-0.3083 ± 0.3882 ± 0.0182
	0.52 – 0.70	0.00 – 0.24	1.89	0.089	0.410	0.592	0.156	0.856	-0.8134 ± 0.4857 ± 0.0319	-0.8134 ± 0.4857 ± 0.0319
		0.24 – 0.40	1.95	0.089	0.427	0.593	0.320	0.839	-0.2268 ± 0.4441 ± 0.0148	-0.2268 ± 0.4441 ± 0.0148
		0.40 – 0.57	2.05	0.088	0.450	0.594	0.481	0.817	1.0020 ± 0.6100 ± 0.0402	1.0020 ± 0.6100 ± 0.0402
		0.57 – 2.00	2.24	0.088	0.494	0.598	0.781	0.772	-0.0399 ± 0.3954 ± 0.0300	-0.0399 ± 0.3954 ± 0.0300
0.107 – 0.157	0.20 – 0.34	0.00 – 0.24	3.97	0.128	0.600	0.295	0.156	0.677	-0.4394 ± 0.3808 ± 0.0045	-0.4394 ± 0.3808 ± 0.0045
		0.24 – 0.40	4.13	0.129	0.622	0.288	0.321	0.648	-0.1461 ± 0.5505 ± 0.0231	-0.1461 ± 0.5505 ± 0.0231
		0.40 – 0.57	4.27	0.128	0.644	0.283	0.481	0.617	0.3060 ± 0.3562 ± 0.0166	0.3060 ± 0.3562 ± 0.0166
		0.57 – 2.00	4.24	0.127	0.646	0.288	0.719	0.613	-0.0629 ± 0.3784 ± 0.0064	-0.0629 ± 0.3784 ± 0.0064
	0.34 – 0.43	0.00 – 0.24	3.38	0.130	0.504	0.387	0.152	0.780	-0.0219 ± 0.3868 ± 0.0225	-0.0219 ± 0.3868 ± 0.0225
		0.24 – 0.40	3.48	0.129	0.523	0.388	0.316	0.759	-0.4368 ± 0.4524 ± 0.0358	-0.4368 ± 0.4524 ± 0.0358
		0.40 – 0.57	3.69	0.128	0.555	0.386	0.477	0.722	0.1034 ± 0.5384 ± 0.0460	0.1034 ± 0.5384 ± 0.0460
		0.57 – 2.00	3.71	0.127	0.563	0.385	0.754	0.712	0.5329 ± 0.4373 ± 0.0010	0.5329 ± 0.4373 ± 0.0010
	0.43 – 0.52	0.00 – 0.24	3.06	0.129	0.457	0.474	0.156	0.820	1.2780 ± 0.4099 ± 0.0396	1.2780 ± 0.4099 ± 0.0396
		0.24 – 0.40	3.14	0.130	0.469	0.475	0.317	0.807	-0.0399 ± 0.4336 ± 0.0634	-0.0399 ± 0.4336 ± 0.0634
		0.40 – 0.57	3.29	0.129	0.492	0.472	0.478	0.784	-0.1507 ± 0.6065 ± 0.0077	-0.1507 ± 0.6065 ± 0.0077
		0.57 – 2.00	3.45	0.128	0.524	0.473	0.771	0.747	0.4735 ± 0.4910 ± 0.0251	0.4735 ± 0.4910 ± 0.0251
	0.52 – 0.70	0.00 – 0.24	2.75	0.129	0.413	0.594	0.154	0.852	-0.7104 ± 0.4674 ± 0.0149	-0.7104 ± 0.4674 ± 0.0149
		0.24 – 0.40	2.77	0.129	0.415	0.594	0.320	0.848	-0.1672 ± 0.4356 ± 0.0386	-0.1672 ± 0.4356 ± 0.0386
		0.40 – 0.57	2.85	0.130	0.425	0.602	0.479	0.840	0.2834 ± 0.5584 ± 0.0158	0.2834 ± 0.5584 ± 0.0158
		0.57 – 2.00	3.17	0.129	0.476	0.602	0.769	0.788	0.0255 ± 0.5243 ± 0.0244	0.0255 ± 0.5243 ± 0.0244
0.157 – 0.600	0.20 – 0.34	0.00 – 0.24	6.65	0.229	0.566	0.301	0.155	0.717	0.1957 ± 0.3847 ± 0.0323	0.1957 ± 0.3847 ± 0.0323
		0.24 – 0.40	6.49	0.219	0.579	0.298	0.317	0.703	-0.6746 ± 0.4762 ± 0.0074	-0.6746 ± 0.4762 ± 0.0074
		0.40 – 0.57	6.54	0.211	0.608	0.290	0.476	0.664	0.8527 ± 0.5046 ± 0.0100	0.8527 ± 0.5046 ± 0.0100
		0.57 – 2.00	6.59	0.216	0.597	0.292	0.719	0.678	0.7209 ± 0.7025 ± 0.0009	0.7209 ± 0.7025 ± 0.0009
	0.34 – 0.43	0.00 – 0.24	5.84	0.231	0.492	0.386	0.154	0.793	0.0147 ± 0.3189 ± 0.0125	0.0147 ± 0.3189 ± 0.0125
		0.24 – 0.40	5.96	0.233	0.499	0.387	0.315	0.786	0.0516 ± 0.3606 ± 0.0236	0.0516 ± 0.3606 ± 0.0236
		0.40 – 0.57	5.97	0.230	0.509	0.389	0.473	0.774	-0.0414 ± 0.5113 ± 0.0253	-0.0414 ± 0.5113 ± 0.0253
		0.57 – 2.00	6.10	0.235	0.511	0.386	0.764	0.771	-0.2116 ± 0.5948 ± 0.0171	-0.2116 ± 0.5948 ± 0.0171
	0.43 – 0.52	0.00 – 0.24	5.22	0.228	0.444	0.474	0.153	0.833	-0.3082 ± 0.3710 ± 0.0329	-0.3082 ± 0.3710 ± 0.0329
		0.24 – 0.40	5.38	0.234	0.450	0.473	0.316	0.826	0.1350 ± 0.3687 ± 0.0044	0.1350 ± 0.3687 ± 0.0044
		0.40 – 0.57	5.47	0.234	0.458	0.476	0.476	0.818	0.2788 ± 0.5048 ± 0.0134	0.2788 ± 0.5048 ± 0.0134
		0.57 – 2.00	5.60	0.237	0.467	0.476	0.756	0.805	0.8491 ± 0.5545 ± 0.0579	0.8491 ± 0.5545 ± 0.0579
	0.52 – 0.70	0.00 – 0.24	4.95	0.223	0.426	0.593	0.156	0.844	0.2625 ± 0.4068 ± 0.0055	0.2625 ± 0.4068 ± 0.0055
		0.24 – 0.40	4.89	0.229	0.411	0.594	0.319	0.855	-0.1771 ± 0.4077 ± 0.0206	-0.1771 ± 0.4077 ± 0.0206
		0.40 – 0.57	4.88	0.231	0.411	0.599	0.479	0.853	-0.3463 ± 0.4508 ± 0.0212	-0.3463 ± 0.4508 ± 0.0212
		0.57 – 2.00	5.07	0.233	0.427	0.604	0.749	0.837	0.3740 ± 0.5018 ± 0.0582	0.3740 ± 0.5018 ± 0.0582

Table 49. Three-dimensionally binned SFA and CSA amplitudes of the $\cos(\phi - \phi_S)$ modulation for p as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

5.5 $\sin(2\phi - \phi_S)$ modulation

Kinematic bin		Average kinematics						π^+	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(2\phi - \phi_S) / \sqrt{2\epsilon(1+\epsilon)} \rangle_{U_\perp}$	$2\langle \sin(2\phi - \phi_S) \rangle_{U_\perp}$
x	0.023 – 0.046	1.29	0.036	0.702	0.336	0.486	0.526	-0.0009 ± 0.0059 ± 0.0003	-0.0029 ± 0.0077 ± 0.0010
	0.046 – 0.067	1.64	0.056	0.567	0.356	0.408	0.700	-0.0002 ± 0.0046 ± 0.0003	0.0001 ± 0.0070 ± 0.0002
	0.067 – 0.082	1.98	0.074	0.516	0.366	0.375	0.752	-0.0016 ± 0.0054 ± 0.0004	-0.0012 ± 0.0086 ± 0.0008
	0.082 – 0.105	2.34	0.093	0.489	0.374	0.358	0.778	0.0079 ± 0.0047 ± 0.0009	0.0125 ± 0.0075 ± 0.0012
	0.082 – 0.105	2.34	0.093	0.489	0.374	0.358	0.778	0.0079 ± 0.0047 ± 0.0009	0.0125 ± 0.0075 ± 0.0012
	0.105 – 0.134	2.87	0.118	0.469	0.379	0.348	0.796	0.0014 ± 0.0048 ± 0.0032	0.0024 ± 0.0078 ± 0.0052
	0.134 – 0.186	3.69	0.157	0.456	0.379	0.342	0.811	-0.0010 ± 0.0047 ± 0.0056	-0.0020 ± 0.0078 ± 0.0096
	0.186 – 0.600	5.71	0.254	0.437	0.375	0.343	0.832	0.0029 ± 0.0055 ± 0.0096	0.0039 ± 0.0091 ± 0.0164
z	0.200 – 0.260	2.44	0.087	0.594	0.229	0.344	0.661	0.0033 ± 0.0036 ± 0.0014	0.0047 ± 0.0053 ± 0.0016
	0.260 – 0.320	2.46	0.094	0.556	0.289	0.371	0.702	0.0073 ± 0.0039 ± 0.0020	0.0133 ± 0.0059 ± 0.0027
	0.320 – 0.380	2.45	0.098	0.533	0.349	0.394	0.725	-0.0015 ± 0.0043 ± 0.0014	-0.0015 ± 0.0068 ± 0.0024
	0.380 – 0.450	2.45	0.100	0.520	0.413	0.418	0.740	0.0060 ± 0.0046 ± 0.0007	0.0099 ± 0.0074 ± 0.0008
	0.450 – 0.520	2.44	0.101	0.508	0.483	0.441	0.753	-0.0081 ± 0.0054 ± 0.0001	-0.0135 ± 0.0087 ± 0.0008
	0.450 – 0.520	2.44	0.101	0.508	0.483	0.441	0.753	-0.0081 ± 0.0054 ± 0.0001	-0.0135 ± 0.0087 ± 0.0008
	0.520 – 0.600	2.43	0.102	0.499	0.558	0.460	0.763	0.0012 ± 0.0060 ± 0.0005	-0.0003 ± 0.0097 ± 0.0002
	0.600 – 0.700	2.41	0.104	0.481	0.647	0.466	0.785	0.0119 ± 0.0063 ± 0.0014	0.0183 ± 0.0106 ± 0.0018
	0.700 – 0.760	2.41	0.107	0.457	0.729	0.453	0.813	0.0243 ± 0.0095 ± 0.0017	0.0392 ± 0.0162 ± 0.0025
	0.760 – 0.840	2.35	0.108	0.434	0.798	0.433	0.837	0.0244 ± 0.0093 ± 0.0018	0.0411 ± 0.0163 ± 0.0027
	0.840 – 1.200	2.31	0.116	0.394	0.916	0.376	0.872	0.0271 ± 0.0083 ± 0.0027	0.0483 ± 0.0149 ± 0.0041
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.56	0.110	0.460	0.341	0.110	0.813	0.0000 ± 0.0040 ± 0.0001	0.0006 ± 0.0069 ± 0.0003
	0.170 – 0.250	2.56	0.108	0.489	0.350	0.211	0.779	0.0044 ± 0.0044 ± 0.0037	0.0083 ± 0.0073 ± 0.0071
	0.250 – 0.310	2.52	0.103	0.514	0.354	0.280	0.750	0.0144 ± 0.0051 ± 0.0052	0.0245 ± 0.0084 ± 0.0100
	0.310 – 0.380	2.46	0.097	0.540	0.355	0.345	0.721	0.0018 ± 0.0050 ± 0.0068	0.0042 ± 0.0079 ± 0.0125
	0.310 – 0.380	2.46	0.097	0.540	0.355	0.345	0.721	0.0018 ± 0.0050 ± 0.0068	0.0042 ± 0.0079 ± 0.0125
	0.380 – 0.520	2.39	0.090	0.570	0.356	0.446	0.686	0.0069 ± 0.0039 ± 0.0064	0.0124 ± 0.0059 ± 0.0112
	0.520 – 0.690	2.34	0.084	0.601	0.373	0.594	0.648	0.0053 ± 0.0047 ± 0.0025	0.0079 ± 0.0068 ± 0.0052
	0.690 – 2.000	2.30	0.076	0.642	0.429	0.849	0.597	-0.0120 ± 0.0060 ± 0.0020	-0.0148 ± 0.0082 ± 0.0017

Table 50. One-dimensionally binned SFA and CSA amplitudes of the $\sin(2\phi - \phi_S)$ modulation for π^+ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin		Average kinematics						π^0	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(2\phi - \phi_S) / \sqrt{2\epsilon(1+\epsilon)} \rangle_{U\perp}$	$2\langle \sin(2\phi - \phi_S) \rangle_{U\perp}$
x	0.023 – 0.046	1.30	0.036	0.712	0.325	0.492	0.512	-0.0047 ± 0.0184 ± 0.0008	0.0021 ± 0.0252 ± 0.0014
	0.046 – 0.067	1.72	0.056	0.597	0.352	0.406	0.665	-0.0239 ± 0.0150 ± 0.0008	-0.0297 ± 0.0226 ± 0.0015
	0.067 – 0.082	2.14	0.074	0.558	0.366	0.374	0.708	0.0325 ± 0.0175 ± 0.0014	0.0437 ± 0.0270 ± 0.0024
	0.082 – 0.105	2.58	0.093	0.538	0.372	0.353	0.731	0.0041 ± 0.0149 ± 0.0008	0.0123 ± 0.0234 ± 0.0011
	0.082 – 0.105	2.58	0.093	0.538	0.372	0.353	0.731	0.0041 ± 0.0149 ± 0.0008	0.0123 ± 0.0234 ± 0.0011
	0.105 – 0.134	3.19	0.118	0.522	0.378	0.338	0.749	0.0031 ± 0.0151 ± 0.0022	0.0092 ± 0.0239 ± 0.0035
	0.134 – 0.186	4.10	0.156	0.507	0.380	0.323	0.766	0.0198 ± 0.0140 ± 0.0044	0.0372 ± 0.0228 ± 0.0067
	0.186 – 0.600	6.14	0.249	0.479	0.386	0.326	0.797	-0.0110 ± 0.0163 ± 0.0046	-0.0177 ± 0.0268 ± 0.0076
z	0.200 – 0.260	2.45	0.078	0.648	0.229	0.337	0.598	0.0135 ± 0.0170 ± 0.0035	0.0291 ± 0.0235 ± 0.0042
	0.260 – 0.320	2.49	0.085	0.609	0.289	0.372	0.645	-0.0075 ± 0.0139 ± 0.0031	-0.0089 ± 0.0203 ± 0.0035
	0.320 – 0.380	2.52	0.090	0.581	0.348	0.401	0.679	0.0167 ± 0.0136 ± 0.0033	0.0234 ± 0.0204 ± 0.0035
	0.380 – 0.450	2.53	0.095	0.558	0.413	0.427	0.705	-0.0046 ± 0.0126 ± 0.0032	-0.0027 ± 0.0196 ± 0.0039
	0.450 – 0.520	2.55	0.099	0.537	0.483	0.450	0.728	0.0036 ± 0.0127 ± 0.0034	0.0088 ± 0.0203 ± 0.0048
	0.450 – 0.520	2.55	0.099	0.537	0.483	0.450	0.728	0.0036 ± 0.0127 ± 0.0034	0.0088 ± 0.0203 ± 0.0048
	0.520 – 0.600	2.57	0.102	0.517	0.557	0.469	0.750	0.0097 ± 0.0133 ± 0.0031	0.0166 ± 0.0217 ± 0.0034
	0.600 – 0.700	2.59	0.106	0.496	0.645	0.483	0.774	0.0285 ± 0.0134 ± 0.0034	0.0500 ± 0.0225 ± 0.0051
	0.700 – 0.760	2.61	0.112	0.472	0.728	0.494	0.799	-0.0088 ± 0.0212 ± 0.0032	-0.0112 ± 0.0360 ± 0.0035
	0.760 – 0.840	2.66	0.116	0.457	0.796	0.488	0.815	-0.0136 ± 0.0227 ± 0.0046	-0.0239 ± 0.0391 ± 0.0073
	0.840 – 1.200	2.56	0.121	0.418	0.908	0.478	0.849	0.0665 ± 0.0247 ± 0.0037	0.1214 ± 0.0436 ± 0.0046
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.82	0.114	0.481	0.338	0.111	0.799	0.0106 ± 0.0150 ± 0.0043	0.0182 ± 0.0262 ± 0.0066
	0.170 – 0.250	2.69	0.103	0.529	0.340	0.211	0.745	0.0074 ± 0.0149 ± 0.0043	0.0160 ± 0.0252 ± 0.0067
	0.250 – 0.310	2.59	0.095	0.563	0.343	0.280	0.705	0.0231 ± 0.0157 ± 0.0045	0.0407 ± 0.0261 ± 0.0070
	0.310 – 0.380	2.49	0.088	0.591	0.347	0.345	0.668	-0.0110 ± 0.0156 ± 0.0061	-0.0085 ± 0.0249 ± 0.0106
	0.310 – 0.380	2.49	0.088	0.591	0.347	0.345	0.668	-0.0110 ± 0.0156 ± 0.0061	-0.0085 ± 0.0249 ± 0.0106
	0.380 – 0.520	2.39	0.081	0.624	0.353	0.446	0.625	0.0108 ± 0.0116 ± 0.0063	0.0283 ± 0.0177 ± 0.0107
	0.520 – 0.690	2.30	0.074	0.652	0.371	0.595	0.587	0.0072 ± 0.0127 ± 0.0063	0.0081 ± 0.0187 ± 0.0101
	0.690 – 2.000	2.27	0.071	0.675	0.428	0.849	0.554	0.0093 ± 0.0132 ± 0.0045	0.0125 ± 0.0184 ± 0.0068

Table 51. One-dimensionally binned SFA and CSA amplitudes of the $\sin(2\phi - \phi_S)$ modulation for π^0 as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin		Average kinematics						π^-	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(2\phi - \phi_S) / \sqrt{2\epsilon(1+\epsilon)} \rangle_{U\perp}$	$2\langle \sin(2\phi - \phi_S) \rangle_{U\perp}$
x	0.023 – 0.046	1.29	0.036	0.704	0.330	0.481	0.524	0.0093 ± 0.0065 ± 0.0046	0.0103 ± 0.0084 ± 0.0057
	0.046 – 0.067	1.64	0.056	0.568	0.350	0.402	0.699	-0.0067 ± 0.0052 ± 0.0014	-0.0087 ± 0.0079 ± 0.0017
	0.067 – 0.082	1.98	0.074	0.515	0.359	0.369	0.752	0.0076 ± 0.0063 ± 0.0001	0.0125 ± 0.0099 ± 0.0004
	0.082 – 0.105	2.33	0.093	0.487	0.366	0.354	0.779	-0.0051 ± 0.0055 ± 0.0010	-0.0080 ± 0.0089 ± 0.0016
	0.082 – 0.105	2.33	0.093	0.487	0.366	0.354	0.779	-0.0051 ± 0.0055 ± 0.0010	-0.0080 ± 0.0089 ± 0.0016
	0.105 – 0.134	2.86	0.118	0.468	0.369	0.348	0.797	0.0046 ± 0.0058 ± 0.0002	0.0093 ± 0.0095 ± 0.0003
	0.134 – 0.186	3.66	0.156	0.454	0.369	0.342	0.813	0.0055 ± 0.0059 ± 0.0008	0.0108 ± 0.0097 ± 0.0011
	0.186 – 0.600	5.66	0.253	0.434	0.364	0.349	0.835	0.0019 ± 0.0071 ± 0.0025	0.0018 ± 0.0117 ± 0.0046
z	0.200 – 0.260	2.39	0.084	0.598	0.229	0.350	0.656	-0.0034 ± 0.0041 ± 0.0005	-0.0039 ± 0.0060 ± 0.0013
	0.260 – 0.320	2.38	0.091	0.559	0.289	0.379	0.698	-0.0028 ± 0.0045 ± 0.0003	-0.0043 ± 0.0068 ± 0.0014
	0.320 – 0.380	2.36	0.094	0.536	0.348	0.403	0.721	0.0045 ± 0.0051 ± 0.0002	0.0075 ± 0.0080 ± 0.0007
	0.380 – 0.450	2.37	0.097	0.521	0.413	0.422	0.738	0.0081 ± 0.0056 ± 0.0003	0.0145 ± 0.0089 ± 0.0011
	0.450 – 0.520	2.35	0.098	0.509	0.483	0.437	0.751	0.0017 ± 0.0067 ± 0.0017	0.0037 ± 0.0107 ± 0.0025
	0.450 – 0.520	2.35	0.098	0.509	0.483	0.437	0.751	0.0017 ± 0.0067 ± 0.0017	0.0037 ± 0.0107 ± 0.0025
	0.520 – 0.600	2.31	0.098	0.498	0.558	0.449	0.764	-0.0007 ± 0.0074 ± 0.0024	-0.0022 ± 0.0121 ± 0.0041
	0.600 – 0.700	2.27	0.099	0.479	0.646	0.438	0.787	0.0103 ± 0.0081 ± 0.0023	0.0159 ± 0.0135 ± 0.0040
	0.700 – 0.760	2.19	0.099	0.452	0.729	0.416	0.818	-0.0056 ± 0.0123 ± 0.0031	-0.0113 ± 0.0212 ± 0.0057
	0.760 – 0.840	2.15	0.101	0.432	0.798	0.389	0.839	-0.0014 ± 0.0120 ± 0.0025	0.0005 ± 0.0211 ± 0.0045
	0.840 – 1.200	2.08	0.104	0.399	0.906	0.338	0.868	0.0079 ± 0.0115 ± 0.0006	0.0140 ± 0.0206 ± 0.0004
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.48	0.107	0.462	0.337	0.110	0.811	-0.0028 ± 0.0048 ± 0.0007	-0.0043 ± 0.0082 ± 0.0011
	0.170 – 0.250	2.47	0.103	0.492	0.345	0.211	0.775	0.0011 ± 0.0052 ± 0.0011	0.0011 ± 0.0087 ± 0.0023
	0.250 – 0.310	2.43	0.098	0.520	0.350	0.280	0.743	-0.0058 ± 0.0062 ± 0.0005	-0.0073 ± 0.0100 ± 0.0015
	0.310 – 0.380	2.36	0.092	0.546	0.349	0.345	0.714	0.0007 ± 0.0060 ± 0.0007	0.0007 ± 0.0094 ± 0.0012
	0.310 – 0.380	2.36	0.092	0.546	0.349	0.345	0.714	0.0007 ± 0.0060 ± 0.0007	0.0007 ± 0.0094 ± 0.0012
	0.380 – 0.520	2.30	0.086	0.576	0.347	0.446	0.678	0.0076 ± 0.0046 ± 0.0011	0.0076 ± 0.0070 ± 0.0017
	0.520 – 0.690	2.28	0.081	0.606	0.359	0.594	0.640	0.0047 ± 0.0055 ± 0.0022	0.0073 ± 0.0079 ± 0.0030
	0.690 – 2.000	2.26	0.076	0.643	0.409	0.846	0.594	-0.0019 ± 0.0071 ± 0.0045	0.0028 ± 0.0096 ± 0.0053

Table 52. One-dimensionally binned SFA and CSA amplitudes of the $\sin(2\phi - \phi_S)$ modulation for π^- as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin		Average kinematics						K^+	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(2\phi - \phi_S)/\sqrt{2\epsilon(1+\epsilon)} \rangle_{U\perp}$	$2\langle \sin(2\phi - \phi_S) \rangle_{U\perp}$
	0.023 – 0.046	1.29	0.036	0.704	0.363	0.527	0.524	-0.0298 ± 0.0161 ± 0.0080	-0.0289 ± 0.0208 ± 0.0070
	0.046 – 0.067	1.65	0.056	0.571	0.384	0.436	0.696	-0.0259 ± 0.0123 ± 0.0032	-0.0388 ± 0.0185 ± 0.0039
	0.067 – 0.082	2.01	0.074	0.524	0.392	0.398	0.743	-0.0243 ± 0.0144 ± 0.0020	-0.0369 ± 0.0226 ± 0.0024
x	0.082 – 0.105	2.39	0.093	0.498	0.401	0.378	0.769	0.0136 ± 0.0122 ± 0.0022	0.0172 ± 0.0197 ± 0.0044
	0.082 – 0.105	2.39	0.093	0.498	0.401	0.378	0.769	0.0136 ± 0.0122 ± 0.0022	0.0172 ± 0.0197 ± 0.0044
	0.105 – 0.134	2.93	0.118	0.479	0.404	0.366	0.788	-0.0165 ± 0.0124 ± 0.0060	-0.0257 ± 0.0203 ± 0.0095
	0.134 – 0.186	3.79	0.157	0.468	0.408	0.358	0.801	-0.0076 ± 0.0117 ± 0.0044	-0.0136 ± 0.0193 ± 0.0060
	0.186 – 0.600	5.86	0.252	0.451	0.410	0.357	0.822	0.0067 ± 0.0128 ± 0.0035	0.0108 ± 0.0213 ± 0.0046
	0.200 – 0.260	2.46	0.085	0.603	0.228	0.351	0.652	-0.0207 ± 0.0114 ± 0.0006	-0.0283 ± 0.0167 ± 0.0000
	0.260 – 0.320	2.49	0.092	0.569	0.287	0.378	0.688	-0.0106 ± 0.0109 ± 0.0005	-0.0147 ± 0.0165 ± 0.0012
	0.320 – 0.380	2.53	0.097	0.548	0.347	0.403	0.711	-0.0280 ± 0.0111 ± 0.0011	-0.0405 ± 0.0174 ± 0.0023
	0.380 – 0.450	2.56	0.101	0.532	0.412	0.425	0.730	0.0051 ± 0.0110 ± 0.0007	0.0036 ± 0.0178 ± 0.0011
z	0.450 – 0.520	2.55	0.102	0.522	0.482	0.458	0.739	-0.0039 ± 0.0123 ± 0.0009	-0.0081 ± 0.0200 ± 0.0009
	0.450 – 0.520	2.55	0.102	0.522	0.482	0.458	0.739	-0.0039 ± 0.0123 ± 0.0009	-0.0081 ± 0.0200 ± 0.0009
	0.520 – 0.600	2.54	0.104	0.515	0.556	0.484	0.748	-0.0169 ± 0.0130 ± 0.0025	-0.0268 ± 0.0212 ± 0.0047
	0.600 – 0.700	2.61	0.108	0.500	0.645	0.506	0.766	0.0021 ± 0.0139 ± 0.0002	0.0108 ± 0.0229 ± 0.0009
	0.700 – 0.760	2.63	0.112	0.474	0.727	0.506	0.797	-0.0163 ± 0.0208 ± 0.0016	-0.0231 ± 0.0352 ± 0.0021
	0.760 – 0.840	2.62	0.116	0.448	0.796	0.501	0.825	0.0012 ± 0.0206 ± 0.0008	-0.0005 ± 0.0354 ± 0.0006
	0.840 – 1.200	2.47	0.119	0.411	0.903	0.469	0.858	0.0098 ± 0.0211 ± 0.0024	0.0181 ± 0.0375 ± 0.0040
	0.000 – 0.170	2.68	0.113	0.468	0.362	0.111	0.807	-0.0043 ± 0.0105 ± 0.0007	-0.0068 ± 0.0179 ± 0.0007
	0.170 – 0.250	2.66	0.109	0.495	0.372	0.211	0.775	0.0008 ± 0.0116 ± 0.0042	-0.0005 ± 0.0194 ± 0.0077
	0.250 – 0.310	2.66	0.106	0.517	0.377	0.280	0.750	-0.0091 ± 0.0137 ± 0.0090	-0.0234 ± 0.0224 ± 0.0158
$P_{h\perp}$	0.310 – 0.380	2.56	0.099	0.540	0.381	0.345	0.723	-0.0030 ± 0.0134 ± 0.0077	-0.0025 ± 0.0213 ± 0.0142
	0.310 – 0.380	2.56	0.099	0.540	0.381	0.345	0.723	-0.0030 ± 0.0134 ± 0.0077	-0.0025 ± 0.0213 ± 0.0142
[GeV]	0.380 – 0.520	2.49	0.093	0.565	0.387	0.447	0.692	-0.0103 ± 0.0104 ± 0.0069	-0.0110 ± 0.0160 ± 0.0119
	0.520 – 0.690	2.41	0.087	0.593	0.402	0.597	0.658	-0.0185 ± 0.0119 ± 0.0017	-0.0267 ± 0.0176 ± 0.0041
	0.690 – 2.000	2.29	0.076	0.642	0.451	0.867	0.597	-0.0295 ± 0.0131 ± 0.0042	-0.0307 ± 0.0184 ± 0.0028

Table 53. One-dimensionally binned SFA and CSA amplitudes of the $\sin(2\phi - \phi_S)$ modulation for K^+ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin		Average kinematics						K^-	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(2\phi - \phi_S)/\sqrt{2\epsilon(1+\epsilon)} \rangle_{U\perp}$	$2\langle \sin(2\phi - \phi_S) \rangle_{U\perp}$
	0.023 – 0.046	1.30	0.036	0.711	0.338	0.503	0.513	-0.0049 ± 0.0205 ± 0.0025	-0.0142 ± 0.0259 ± 0.0025
	0.046 – 0.067	1.67	0.056	0.578	0.355	0.417	0.687	0.0281 ± 0.0176 ± 0.0018	0.0416 ± 0.0261 ± 0.0035
	0.067 – 0.082	2.04	0.074	0.533	0.361	0.381	0.734	0.0096 ± 0.0213 ± 0.0057	0.0167 ± 0.0330 ± 0.0086
x	0.082 – 0.105	2.44	0.093	0.510	0.367	0.367	0.758	0.0056 ± 0.0188 ± 0.0028	0.0072 ± 0.0297 ± 0.0045
	0.082 – 0.105	2.44	0.093	0.510	0.367	0.367	0.758	0.0056 ± 0.0188 ± 0.0028	0.0072 ± 0.0297 ± 0.0045
	0.105 – 0.134	3.01	0.118	0.493	0.366	0.362	0.775	0.0145 ± 0.0203 ± 0.0001	0.0212 ± 0.0326 ± 0.0001
	0.134 – 0.186	3.89	0.157	0.480	0.365	0.356	0.790	-0.0173 ± 0.0198 ± 0.0021	-0.0236 ± 0.0322 ± 0.0021
	0.186 – 0.600	5.82	0.251	0.451	0.363	0.364	0.821	-0.0168 ± 0.0241 ± 0.0010	-0.0240 ± 0.0396 ± 0.0004
	0.200 – 0.260	2.41	0.082	0.616	0.227	0.362	0.636	-0.0001 ± 0.0149 ± 0.0010	-0.0053 ± 0.0211 ± 0.0044
	0.260 – 0.320	2.41	0.087	0.582	0.287	0.389	0.673	-0.0024 ± 0.0154 ± 0.0027	-0.0072 ± 0.0230 ± 0.0003
	0.320 – 0.380	2.40	0.091	0.557	0.347	0.419	0.701	-0.0041 ± 0.0169 ± 0.0044	0.0019 ± 0.0261 ± 0.0029
	0.380 – 0.450	2.37	0.092	0.542	0.411	0.440	0.718	0.0067 ± 0.0181 ± 0.0038	0.0075 ± 0.0287 ± 0.0035
z	0.450 – 0.520	2.29	0.091	0.534	0.482	0.460	0.726	0.0354 ± 0.0208 ± 0.0065	0.0602 ± 0.0332 ± 0.0084
	0.450 – 0.520	2.29	0.091	0.534	0.482	0.460	0.726	0.0354 ± 0.0208 ± 0.0065	0.0602 ± 0.0332 ± 0.0084
	0.520 – 0.600	2.34	0.093	0.531	0.556	0.465	0.729	0.0083 ± 0.0246 ± 0.0037	0.0231 ± 0.0399 ± 0.0048
	0.600 – 0.700	2.33	0.094	0.520	0.642	0.493	0.744	-0.0022 ± 0.0303 ± 0.0065	-0.0004 ± 0.0495 ± 0.0105
	0.700 – 0.760	2.28	0.093	0.506	0.726	0.500	0.766	0.0813 ± 0.0555 ± 0.0010	0.1416 ± 0.0907 ± 0.0028
	0.760 – 0.840	2.30	0.096	0.482	0.793	0.464	0.795	0.0370 ± 0.0702 ± 0.0021	0.0799 ± 0.1197 ± 0.0045
	0.000 – 0.170	2.47	0.103	0.477	0.337	0.111	0.797	0.0248 ± 0.0166 ± 0.0047	0.0441 ± 0.0281 ± 0.0075
	0.170 – 0.250	2.48	0.100	0.513	0.346	0.210	0.756	0.0038 ± 0.0187 ± 0.0029	0.0004 ± 0.0305 ± 0.0032
	0.250 – 0.310	2.48	0.096	0.540	0.346	0.280	0.724	-0.0193 ± 0.0217 ± 0.0014	-0.0345 ± 0.0346 ± 0.0008
$P_{h\perp}$	0.310 – 0.380	2.39	0.089	0.566	0.351	0.345	0.692	-0.0023 ± 0.0213 ± 0.0024	-0.0099 ± 0.0330 ± 0.0009
	0.310 – 0.380	2.39	0.089	0.566	0.351	0.345	0.692	-0.0023 ± 0.0213 ± 0.0024	-0.0099 ± 0.0330 ± 0.0009
[GeV]	0.380 – 0.520	2.32	0.084	0.592	0.348	0.447	0.661	-0.0034 ± 0.0163 ± 0.0007	-0.0007 ± 0.0241 ± 0.0018
	0.520 – 0.690	2.31	0.080	0.620	0.358	0.597	0.625	-0.0001 ± 0.0183 ± 0.0032	-0.0015 ± 0.0260 ± 0.0011
	0.690 – 2.000	2.26	0.073	0.661	0.409	0.856	0.572	0.0229 ± 0.0207 ± 0.0032	0.0337 ± 0.0277 ± 0.0017

Table 54. One-dimensionally binned SFA and CSA amplitudes of the $\sin(2\phi - \phi_S)$ modulation for K^- as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin		Average kinematics						p	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(2\phi - \phi_S) / \sqrt{2\epsilon(1+\epsilon)} \rangle_{U\perp}$	$2\langle \sin(2\phi - \phi_S) \rangle_{U\perp}$
x	0.023 – 0.040	1.24	0.033	0.738	0.354	0.550	0.475	0.0113 ± 0.0213 ± 0.0056	0.0014 ± 0.0265 ± 0.0066
	0.040 – 0.057	1.54	0.048	0.619	0.395	0.490	0.640	-0.0096 ± 0.0164 ± 0.0057	-0.0050 ± 0.0234 ± 0.0087
	0.057 – 0.075	1.90	0.066	0.561	0.424	0.447	0.706	0.0241 ± 0.0154 ± 0.0078	0.0470 ± 0.0234 ± 0.0112
	0.075 – 0.098	2.36	0.086	0.533	0.439	0.430	0.735	0.0073 ± 0.0145 ± 0.0050	0.0153 ± 0.0228 ± 0.0092
	0.075 – 0.098	2.36	0.086	0.533	0.439	0.430	0.735	0.0073 ± 0.0145 ± 0.0050	0.0153 ± 0.0228 ± 0.0092
	0.098 – 0.136	3.06	0.115	0.514	0.449	0.406	0.757	-0.0121 ± 0.0127 ± 0.0035	-0.0259 ± 0.0205 ± 0.0050
	0.136 – 0.185	4.04	0.158	0.496	0.457	0.390	0.777	0.0187 ± 0.0145 ± 0.0005	0.0360 ± 0.0238 ± 0.0010
	0.185 – 0.600	6.13	0.257	0.464	0.471	0.383	0.811	-0.0005 ± 0.0140 ± 0.0034	-0.0013 ± 0.0234 ± 0.0056
z	0.200 – 0.270	2.30	0.062	0.739	0.239	0.477	0.477	0.0074 ± 0.0196 ± 0.0107	0.0080 ± 0.0245 ± 0.0127
	0.270 – 0.340	2.57	0.081	0.643	0.306	0.456	0.613	-0.0098 ± 0.0137 ± 0.0087	-0.0124 ± 0.0198 ± 0.0134
	0.340 – 0.410	2.64	0.093	0.583	0.375	0.443	0.683	0.0186 ± 0.0119 ± 0.0081	0.0301 ± 0.0188 ± 0.0134
	0.410 – 0.470	2.66	0.102	0.544	0.439	0.446	0.723	0.0007 ± 0.0129 ± 0.0033	-0.0037 ± 0.0210 ± 0.0047
	0.470 – 0.530	2.68	0.109	0.512	0.499	0.435	0.757	-0.0158 ± 0.0134 ± 0.0001	-0.0223 ± 0.0223 ± 0.0001
	0.470 – 0.530	2.68	0.109	0.512	0.499	0.435	0.757	-0.0158 ± 0.0134 ± 0.0001	-0.0223 ± 0.0223 ± 0.0001
	0.530 – 0.610	2.64	0.113	0.485	0.567	0.452	0.781	0.0175 ± 0.0137 ± 0.0052	0.0382 ± 0.0229 ± 0.0095
	0.610 – 0.700	2.63	0.119	0.455	0.650	0.463	0.810	0.0241 ± 0.0164 ± 0.0042	0.0357 ± 0.0279 ± 0.0080
	0.700 – 0.780	2.57	0.123	0.423	0.735	0.477	0.841	0.0176 ± 0.0246 ± 0.0001	0.0332 ± 0.0426 ± 0.0015
	0.780 – 0.880	2.54	0.130	0.389	0.821	0.490	0.872	0.0321 ± 0.0344 ± 0.0034	0.0532 ± 0.0609 ± 0.0064
	0.880 – 1.200	2.45	0.136	0.353	0.938	0.505	0.900	-0.0021 ± 0.0607 ± 0.0139	0.0120 ± 0.1099 ± 0.0273
$P_{h\perp}$ [GeV]	0.000 – 0.230	2.88	0.113	0.510	0.435	0.150	0.765	-0.0076 ± 0.0107 ± 0.0062	-0.0103 ± 0.0179 ± 0.0091
	0.230 – 0.340	2.76	0.106	0.543	0.427	0.286	0.723	-0.0039 ± 0.0119 ± 0.0069	-0.0003 ± 0.0196 ± 0.0103
	0.340 – 0.430	2.62	0.097	0.569	0.416	0.385	0.691	0.0200 ± 0.0141 ± 0.0087	0.0256 ± 0.0224 ± 0.0152
	0.430 – 0.520	2.54	0.091	0.590	0.413	0.474	0.666	0.0003 ± 0.0155 ± 0.0061	0.0026 ± 0.0238 ± 0.0101
	0.430 – 0.520	2.54	0.091	0.590	0.413	0.474	0.666	0.0003 ± 0.0155 ± 0.0061	0.0026 ± 0.0238 ± 0.0101
	0.520 – 0.620	2.44	0.085	0.608	0.406	0.568	0.644	0.0026 ± 0.0160 ± 0.0006	-0.0037 ± 0.0241 ± 0.0017
	0.620 – 0.740	2.35	0.080	0.620	0.405	0.676	0.628	0.0384 ± 0.0178 ± 0.0047	0.0609 ± 0.0259 ± 0.0062
	0.740 – 2.000	2.31	0.078	0.633	0.432	0.904	0.609	0.0057 ± 0.0163 ± 0.0030	0.0093 ± 0.0226 ± 0.0021

Table 55. One-dimensionally binned SFA and CSA amplitudes of the $\sin(2\phi - \phi_S)$ modulation for p as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin		Average kinematics						$\bar{p}$	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(2\phi - \phi_S) / \sqrt{2\epsilon(1+\epsilon)} \rangle_{U\perp}$	$2\langle \sin(2\phi - \phi_S) \rangle_{U\perp}$
x	0.023 – 0.040	1.26	0.032	0.759	0.335	0.539	0.442	0.0032 ± 0.0443 ± 0.0000	-0.0205 ± 0.0515 ± 0.0001
	0.040 – 0.057	1.65	0.048	0.666	0.360	0.492	0.579	0.0694 ± 0.0422 ± 0.0062	0.0977 ± 0.0553 ± 0.0101
	0.057 – 0.075	2.12	0.065	0.628	0.372	0.472	0.626	0.0741 ± 0.0432 ± 0.0016	0.1052 ± 0.0595 ± 0.0060
	0.075 – 0.098	2.69	0.085	0.608	0.377	0.450	0.655	0.0108 ± 0.0445 ± 0.0127	0.0127 ± 0.0649 ± 0.0240
	0.075 – 0.098	2.69	0.085	0.608	0.377	0.450	0.655	0.0108 ± 0.0445 ± 0.0127	0.0127 ± 0.0649 ± 0.0240
	0.098 – 0.136	3.48	0.115	0.588	0.385	0.429	0.678	0.0592 ± 0.0435 ± 0.0245	0.1238 ± 0.0649 ± 0.0436
	0.136 – 0.185	4.58	0.158	0.562	0.385	0.399	0.712	0.0536 ± 0.0509 ± 0.0269	0.0846 ± 0.0795 ± 0.0467
	0.185 – 0.600	6.60	0.243	0.531	0.406	0.383	0.748	-0.0148 ± 0.0526 ± 0.0280	-0.0358 ± 0.0838 ± 0.0477
z	0.200 – 0.270	2.25	0.060	0.750	0.238	0.471	0.459	0.0678 ± 0.0399 ± 0.0079	0.0857 ± 0.0474 ± 0.0078
	0.270 – 0.340	2.48	0.074	0.679	0.304	0.476	0.562	0.0068 ± 0.0332 ± 0.0073	0.0015 ± 0.0442 ± 0.0071
	0.340 – 0.410	2.43	0.079	0.634	0.373	0.482	0.618	0.0052 ± 0.0348 ± 0.0025	-0.0106 ± 0.0512 ± 0.0030
	0.410 – 0.470	2.43	0.085	0.595	0.437	0.470	0.665	0.0255 ± 0.0447 ± 0.0075	0.0382 ± 0.0686 ± 0.0206
	0.470 – 0.530	2.41	0.085	0.583	0.498	0.478	0.678	0.0465 ± 0.0564 ± 0.0119	0.0839 ± 0.0861 ± 0.0292
	0.470 – 0.530	2.41	0.085	0.583	0.498	0.478	0.678	0.0465 ± 0.0564 ± 0.0119	0.0839 ± 0.0861 ± 0.0292
	0.530 – 0.610	2.26	0.083	0.567	0.563	0.492	0.698	0.1127 ± 0.0608 ± 0.0119	0.1937 ± 0.0959 ± 0.0258
	0.610 – 0.700	2.40	0.095	0.527	0.645	0.502	0.745	0.0951 ± 0.0846 ± 0.0227	0.1263 ± 0.1364 ± 0.0426
$P_{h\perp}$ [GeV]	0.000 – 0.230	2.79	0.097	0.586	0.378	0.151	0.683	0.0350 ± 0.0376 ± 0.0027	0.0778 ± 0.0590 ± 0.0004
	0.230 – 0.340	2.53	0.083	0.630	0.364	0.288	0.622	0.1073 ± 0.0437 ± 0.0040	0.1281 ± 0.0668 ± 0.0125
	0.340 – 0.430	2.37	0.075	0.652	0.358	0.385	0.592	-0.0327 ± 0.0518 ± 0.0145	-0.0267 ± 0.0733 ± 0.0301
	0.430 – 0.520	2.35	0.073	0.667	0.351	0.475	0.572	0.0659 ± 0.0474 ± 0.0100	0.1022 ± 0.0650 ± 0.0178
	0.430 – 0.520	2.35	0.073	0.667	0.351	0.475	0.572	0.0659 ± 0.0474 ± 0.0100	0.1022 ± 0.0650 ± 0.0178
	0.520 – 0.620	2.30	0.070	0.678	0.355	0.569	0.557	0.0924 ± 0.0477 ± 0.0129	0.1061 ± 0.0646 ± 0.0210
	0.620 – 0.740	2.21	0.066	0.687	0.355	0.675	0.544	0.0023 ± 0.0455 ± 0.0115	0.0024 ± 0.0591 ± 0.0186
	0.740 – 2.000	2.12	0.062	0.698	0.386	0.886	0.527	-0.0216 ± 0.0456 ± 0.0114	-0.0326 ± 0.0572 ± 0.0192

Table 56. One-dimensionally binned SFA and CSA amplitudes of the $\sin(2\phi - \phi_S)$ modulation for $\bar{p}$ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin			Average kinematics						π^+	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(2\phi - \phi_S) / \sqrt{2\epsilon(1+\epsilon)} \rangle_{U\perp}$	$2\langle \sin(2\phi - \phi_S) \rangle_{U\perp}$
0.023 – 0.072	0.20 – 0.28	0.00 – 0.23	1.46	0.052	0.561	0.236	0.151	0.708	0.0008 ± 0.0134 ± 0.0030	0.0008 ± 0.0134 ± 0.0030
		0.23 – 0.36	1.51	0.048	0.632	0.235	0.298	0.619	-0.0008 ± 0.0140 ± 0.0002	-0.0008 ± 0.0140 ± 0.0002
		0.36 – 0.54	1.54	0.046	0.673	0.237	0.443	0.564	0.0043 ± 0.0085 ± 0.0007	0.0043 ± 0.0085 ± 0.0007
		0.54 – 2.00	1.59	0.043	0.730	0.242	0.655	0.483	0.0036 ± 0.0117 ± 0.0035	0.0036 ± 0.0117 ± 0.0035
	0.28 – 0.37	0.00 – 0.23	1.43	0.054	0.525	0.320	0.150	0.750	0.0039 ± 0.0155 ± 0.0013	0.0039 ± 0.0155 ± 0.0013
		0.23 – 0.36	1.48	0.050	0.595	0.320	0.297	0.665	0.0122 ± 0.0214 ± 0.0031	0.0122 ± 0.0214 ± 0.0031
		0.36 – 0.54	1.52	0.047	0.640	0.320	0.449	0.607	-0.0033 ± 0.0139 ± 0.0002	-0.0033 ± 0.0139 ± 0.0002
		0.54 – 2.00	1.56	0.045	0.692	0.323	0.699	0.536	-0.0057 ± 0.0107 ± 0.0011	-0.0057 ± 0.0107 ± 0.0011
	0.37 – 0.49	0.00 – 0.23	1.40	0.055	0.504	0.422	0.151	0.775	0.0080 ± 0.0179 ± 0.0011	0.0080 ± 0.0179 ± 0.0011
		0.23 – 0.36	1.45	0.051	0.563	0.422	0.298	0.705	-0.0106 ± 0.0229 ± 0.0017	-0.0106 ± 0.0229 ± 0.0017
		0.36 – 0.54	1.49	0.049	0.609	0.423	0.447	0.648	0.0281 ± 0.0225 ± 0.0036	0.0281 ± 0.0225 ± 0.0036
		0.54 – 2.00	1.54	0.046	0.668	0.425	0.747	0.569	-0.0314 ± 0.0122 ± 0.0032	-0.0314 ± 0.0122 ± 0.0032
	0.49 – 0.70	0.00 – 0.23	1.38	0.056	0.488	0.579	0.151	0.793	0.0132 ± 0.0204 ± 0.0016	0.0132 ± 0.0204 ± 0.0016
		0.23 – 0.36	1.41	0.053	0.529	0.578	0.298	0.745	0.0235 ± 0.0233 ± 0.0009	0.0235 ± 0.0233 ± 0.0009
		0.36 – 0.54	1.45	0.051	0.571	0.577	0.448	0.695	-0.0061 ± 0.0237 ± 0.0016	-0.0061 ± 0.0237 ± 0.0016
		0.54 – 2.00	1.51	0.048	0.633	0.577	0.786	0.618	-0.0137 ± 0.0167 ± 0.0009	-0.0137 ± 0.0167 ± 0.0009
0.072 – 0.098	0.20 – 0.28	0.00 – 0.23	2.10	0.084	0.484	0.239	0.140	0.792	0.0072 ± 0.0130 ± 0.0001	0.0072 ± 0.0130 ± 0.0001
		0.23 – 0.36	2.39	0.084	0.550	0.238	0.295	0.721	-0.0099 ± 0.0183 ± 0.0025	-0.0099 ± 0.0183 ± 0.0025
		0.36 – 0.54	2.47	0.084	0.572	0.239	0.441	0.692	0.0064 ± 0.0150 ± 0.0019	0.0064 ± 0.0150 ± 0.0019
		0.54 – 2.00	2.73	0.084	0.633	0.244	0.643	0.620	0.0028 ± 0.0261 ± 0.0036	0.0028 ± 0.0261 ± 0.0036
	0.28 – 0.37	0.00 – 0.23	1.89	0.084	0.434	0.321	0.142	0.834	-0.0030 ± 0.0139 ± 0.0021	-0.0030 ± 0.0139 ± 0.0021
		0.23 – 0.36	2.14	0.084	0.492	0.322	0.293	0.778	0.0096 ± 0.0189 ± 0.0042	0.0096 ± 0.0189 ± 0.0042
		0.36 – 0.54	2.30	0.084	0.530	0.321	0.444	0.736	0.0099 ± 0.0188 ± 0.0006	0.0099 ± 0.0188 ± 0.0006
		0.54 – 2.00	2.51	0.084	0.581	0.325	0.676	0.678	0.0216 ± 0.0198 ± 0.0036	0.0216 ± 0.0198 ± 0.0036
	0.37 – 0.49	0.00 – 0.23	1.83	0.085	0.420	0.423	0.146	0.846	0.0197 ± 0.0160 ± 0.0019	0.0197 ± 0.0160 ± 0.0019
		0.23 – 0.36	1.99	0.085	0.455	0.424	0.293	0.812	0.0059 ± 0.0191 ± 0.0003	0.0059 ± 0.0191 ± 0.0003
		0.36 – 0.54	2.18	0.084	0.502	0.425	0.443	0.766	-0.0498 ± 0.0217 ± 0.0033	-0.0498 ± 0.0217 ± 0.0033
		0.54 – 2.00	2.38	0.084	0.551	0.427	0.719	0.711	-0.0152 ± 0.0197 ± 0.0003	-0.0152 ± 0.0197 ± 0.0003
	0.49 – 0.70	0.00 – 0.23	1.78	0.085	0.407	0.578	0.148	0.857	0.0407 ± 0.0186 ± 0.0005	0.0407 ± 0.0186 ± 0.0005
		0.23 – 0.36	1.87	0.085	0.427	0.580	0.295	0.838	-0.0059 ± 0.0197 ± 0.0022	-0.0059 ± 0.0197 ± 0.0022
		0.36 – 0.54	2.02	0.084	0.463	0.583	0.443	0.806	0.0126 ± 0.0204 ± 0.0037	0.0126 ± 0.0204 ± 0.0037
		0.54 – 2.00	2.29	0.084	0.530	0.583	0.754	0.736	0.0103 ± 0.0210 ± 0.0022	0.0103 ± 0.0210 ± 0.0022
0.098 – 0.138	0.20 – 0.28	0.00 – 0.23	2.86	0.116	0.477	0.239	0.139	0.799	-0.0003 ± 0.0117 ± 0.0012	-0.0003 ± 0.0117 ± 0.0012
		0.23 – 0.36	3.18	0.116	0.532	0.239	0.292	0.742	-0.0003 ± 0.0167 ± 0.0027	-0.0003 ± 0.0167 ± 0.0027
		0.36 – 0.54	3.26	0.115	0.547	0.239	0.441	0.721	0.0023 ± 0.0170 ± 0.0010	0.0023 ± 0.0170 ± 0.0010
		0.54 – 2.00	3.53	0.115	0.593	0.244	0.638	0.670	-0.0131 ± 0.0329 ± 0.0027	-0.0131 ± 0.0329 ± 0.0027
	0.28 – 0.37	0.00 – 0.23	2.53	0.116	0.422	0.322	0.143	0.843	-0.0077 ± 0.0123 ± 0.0025	-0.0077 ± 0.0123 ± 0.0025
		0.23 – 0.36	2.81	0.116	0.469	0.323	0.291	0.799	0.0051 ± 0.0163 ± 0.0042	0.0051 ± 0.0163 ± 0.0042
		0.36 – 0.54	3.03	0.116	0.508	0.322	0.442	0.759	0.0133 ± 0.0182 ± 0.0014	0.0133 ± 0.0182 ± 0.0014
		0.54 – 2.00	3.21	0.115	0.539	0.325	0.672	0.725	-0.0016 ± 0.0227 ± 0.0050	-0.0016 ± 0.0227 ± 0.0050
	0.37 – 0.49	0.00 – 0.23	2.41	0.116	0.402	0.423	0.148	0.857	0.0128 ± 0.0144 ± 0.0003	0.0128 ± 0.0144 ± 0.0003
		0.23 – 0.36	2.51	0.116	0.418	0.426	0.293	0.841	-0.0171 ± 0.0158 ± 0.0023	-0.0171 ± 0.0158 ± 0.0023
		0.36 – 0.54	2.84	0.116	0.475	0.427	0.441	0.791	-0.0112 ± 0.0187 ± 0.0029	-0.0112 ± 0.0187 ± 0.0029
		0.54 – 2.00	3.11	0.116	0.521	0.427	0.716	0.741	-0.0092 ± 0.0206 ± 0.0018	-0.0092 ± 0.0206 ± 0.0018
	0.49 – 0.70	0.00 – 0.23	2.38	0.116	0.398	0.577	0.151	0.862	-0.0130 ± 0.0166 ± 0.0008	-0.0130 ± 0.0166 ± 0.0008
		0.23 – 0.36	2.40	0.116	0.400	0.579	0.296	0.858	0.0145 ± 0.0169 ± 0.0039	0.0145 ± 0.0169 ± 0.0039
		0.36 – 0.54	2.55	0.116	0.426	0.582	0.441	0.835	0.0195 ± 0.0169 ± 0.0031	0.0195 ± 0.0169 ± 0.0031
		0.54 – 2.00	2.98	0.115	0.500	0.584	0.742	0.765	0.0303 ± 0.0193 ± 0.0009	0.0303 ± 0.0193 ± 0.0009
0.138 – 0.600	0.20 – 0.28	0.00 – 0.23	4.95	0.205	0.467	0.239	0.141	0.811	-0.0036 ± 0.0099 ± 0.0051	-0.0036 ± 0.0099 ± 0.0051
		0.23 – 0.36	5.26	0.214	0.486	0.241	0.290	0.790	-0.0048 ± 0.0140 ± 0.0045	-0.0048 ± 0.0140 ± 0.0045
		0.36 – 0.54	5.21	0.207	0.497	0.240	0.440	0.776	0.0241 ± 0.0192 ± 0.0057	0.0241 ± 0.0192 ± 0.0057
		0.54 – 2.00	5.42	0.209	0.515	0.244	0.637	0.759	-0.0283 ± 0.0497 ± 0.0067	-0.0283 ± 0.0497 ± 0.0067
	0.28 – 0.37	0.00 – 0.23	4.48	0.201	0.428	0.321	0.147	0.841	0.0077 ± 0.0106 ± 0.0024	0.0077 ± 0.0106 ± 0.0024
		0.23 – 0.36	4.64	0.210	0.430	0.323	0.292	0.835	0.0097 ± 0.0136 ± 0.0079	0.0097 ± 0.0136 ± 0.0079
		0.36 – 0.54	4.89	0.211	0.457	0.324	0.439	0.810	0.0257 ± 0.0164 ± 0.0065	0.0257 ± 0.0164 ± 0.0065
		0.54 – 2.00	4.93	0.205	0.474	0.325	0.671	0.793	-0.0131 ± 0.0277 ± 0.0063	-0.0131 ± 0.0277 ± 0.0063
	0.37 – 0.49	0.00 – 0.23	4.38	0.201	0.419	0.422	0.150	0.847	-0.0028 ± 0.0124 ± 0.0030	-0.0028 ± 0.0124 ± 0.0030
		0.23 – 0.36	4.38	0.205	0.413	0.424	0.294	0.850	0.0067 ± 0.0138 ± 0.0056	0.0067 ± 0.0138 ± 0.0056
		0.36 – 0.54	4.65	0.210	0.432	0.427	0.438	0.832	-0.0068 ± 0.0153 ± 0.0063	-0.0068 ± 0.0153 ± 0.0063
		0.54 – 2.00	4.84	0.205	0.466	0.427	0.704	0.799	0.0140 ± 0.0207 ± 0.0050	0.0140 ± 0.0207 ± 0.0050
	0.49 – 0.70	0.00 – 0.23	4.33	0.200	0.414	0.575	0.153	0.852	-0.0076 ± 0.0147 ± 0.0002	-0.0076 ± 0.0147 ± 0.0002
		0.23 – 0.36	4.28	0.200	0.410	0.577	0.296	0.852	-0.0141 ± 0.0151 ± 0.0041	-0.0141 ± 0.0151 ± 0.0041
		0.36 – 0.54	4.41	0.206	0.413	0.580	0.444	0.848	-0.0034 ± 0.0145 ± 0.0065	-0.0034 ± 0.0145 ± 0.0065
		0.54 – 2.00	4.82	0.209	0.454	0.587	0.723	0.811	-0.0058 ± 0.0165 ± 0.0065	-0.0058 ± 0.0165 ± 0.0065

Table 57. Three-dimensionally binned SFA and CSA amplitudes of the $\sin(2\phi - \phi_S)$ modulation for π^+ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin			Average kinematics						π^-	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(2\phi - \phi_S) / \sqrt{2\epsilon(1+\epsilon)} \rangle_{U\perp}$	$2\langle \sin(2\phi - \phi_S) \rangle_{U\perp}$
0.023 – 0.072	0.20 – 0.28	0.00 – 0.23	1.46	0.052	0.561	0.236	0.152	0.709	-0.0181 ± 0.0153 ± 0.0015	-0.0181 ± 0.0153 ± 0.0015
		0.23 – 0.36	1.51	0.047	0.636	0.234	0.298	0.613	-0.0160 ± 0.0154 ± 0.0020	-0.0160 ± 0.0154 ± 0.0020
		0.36 – 0.54	1.53	0.045	0.674	0.236	0.443	0.561	-0.0112 ± 0.0096 ± 0.0025	-0.0112 ± 0.0096 ± 0.0025
		0.54 – 2.00	1.58	0.043	0.729	0.241	0.658	0.483	0.0006 ± 0.0129 ± 0.0017	0.0006 ± 0.0129 ± 0.0017
	0.28 – 0.37	0.00 – 0.23	1.43	0.054	0.527	0.320	0.150	0.748	-0.0284 ± 0.0178 ± 0.0006	-0.0284 ± 0.0178 ± 0.0006
		0.23 – 0.36	1.48	0.049	0.597	0.320	0.296	0.662	0.0070 ± 0.0241 ± 0.0002	0.0070 ± 0.0241 ± 0.0002
		0.36 – 0.54	1.50	0.047	0.643	0.319	0.449	0.603	0.0286 ± 0.0154 ± 0.0012	0.0286 ± 0.0154 ± 0.0012
		0.54 – 2.00	1.55	0.045	0.692	0.323	0.703	0.536	0.0014 ± 0.0117 ± 0.0054	0.0014 ± 0.0117 ± 0.0054
	0.37 – 0.49	0.00 – 0.23	1.40	0.055	0.505	0.422	0.152	0.774	0.0321 ± 0.0209 ± 0.0034	0.0321 ± 0.0209 ± 0.0034
		0.23 – 0.36	1.45	0.051	0.566	0.423	0.298	0.701	-0.0101 ± 0.0266 ± 0.0034	-0.0101 ± 0.0266 ± 0.0034
		0.36 – 0.54	1.49	0.048	0.615	0.423	0.448	0.640	-0.0215 ± 0.0260 ± 0.0046	-0.0215 ± 0.0260 ± 0.0046
		0.54 – 2.00	1.53	0.046	0.669	0.424	0.749	0.568	0.0102 ± 0.0140 ± 0.0027	0.0102 ± 0.0140 ± 0.0027
	0.49 – 0.70	0.00 – 0.23	1.37	0.056	0.487	0.579	0.151	0.794	-0.0246 ± 0.0225 ± 0.0010	-0.0246 ± 0.0225 ± 0.0010
		0.23 – 0.36	1.41	0.053	0.532	0.580	0.298	0.743	0.0191 ± 0.0270 ± 0.0009	0.0191 ± 0.0270 ± 0.0009
		0.36 – 0.54	1.44	0.050	0.575	0.578	0.446	0.691	0.0547 ± 0.0282 ± 0.0062	0.0547 ± 0.0282 ± 0.0062
		0.54 – 2.00	1.51	0.047	0.638	0.573	0.785	0.611	0.0202 ± 0.0199 ± 0.0057	0.0202 ± 0.0199 ± 0.0057
0.072 – 0.098	0.20 – 0.28	0.00 – 0.23	2.10	0.084	0.484	0.239	0.140	0.791	0.0179 ± 0.0146 ± 0.0002	0.0179 ± 0.0146 ± 0.0002
		0.23 – 0.36	2.37	0.084	0.547	0.237	0.294	0.724	-0.0126 ± 0.0203 ± 0.0017	-0.0126 ± 0.0203 ± 0.0017
		0.36 – 0.54	2.46	0.084	0.569	0.238	0.440	0.695	0.0053 ± 0.0172 ± 0.0017	0.0053 ± 0.0172 ± 0.0017
		0.54 – 2.00	2.72	0.083	0.632	0.244	0.644	0.622	0.0176 ± 0.0296 ± 0.0020	0.0176 ± 0.0296 ± 0.0020
	0.28 – 0.37	0.00 – 0.23	1.88	0.084	0.432	0.321	0.142	0.836	-0.0077 ± 0.0162 ± 0.0001	-0.0077 ± 0.0162 ± 0.0001
		0.23 – 0.36	2.13	0.084	0.490	0.322	0.292	0.779	-0.0084 ± 0.0222 ± 0.0035	-0.0084 ± 0.0222 ± 0.0035
		0.36 – 0.54	2.26	0.084	0.523	0.320	0.445	0.742	-0.0256 ± 0.0216 ± 0.0036	-0.0256 ± 0.0216 ± 0.0036
		0.54 – 2.00	2.48	0.084	0.575	0.324	0.678	0.685	-0.0076 ± 0.0227 ± 0.0017	-0.0076 ± 0.0227 ± 0.0017
	0.37 – 0.49	0.00 – 0.23	1.82	0.084	0.418	0.423	0.146	0.847	0.0051 ± 0.0192 ± 0.0013	0.0051 ± 0.0192 ± 0.0013
		0.23 – 0.36	1.95	0.084	0.448	0.424	0.292	0.819	0.0372 ± 0.0233 ± 0.0005	0.0372 ± 0.0233 ± 0.0005
		0.36 – 0.54	2.17	0.084	0.502	0.424	0.442	0.767	0.0196 ± 0.0262 ± 0.0022	0.0196 ± 0.0262 ± 0.0022
		0.54 – 2.00	2.37	0.084	0.546	0.425	0.724	0.715	0.0188 ± 0.0234 ± 0.0010	0.0188 ± 0.0234 ± 0.0010
	0.49 – 0.70	0.00 – 0.23	1.78	0.084	0.407	0.579	0.148	0.856	0.0045 ± 0.0225 ± 0.0008	0.0045 ± 0.0225 ± 0.0008
		0.23 – 0.36	1.85	0.084	0.425	0.581	0.295	0.840	0.0140 ± 0.0228 ± 0.0020	0.0140 ± 0.0228 ± 0.0020
		0.36 – 0.54	2.00	0.084	0.461	0.582	0.442	0.808	-0.0159 ± 0.0248 ± 0.0021	-0.0159 ± 0.0248 ± 0.0021
		0.54 – 2.00	2.26	0.084	0.524	0.580	0.751	0.743	0.0094 ± 0.0272 ± 0.0026	0.0094 ± 0.0272 ± 0.0026
0.098 – 0.138	0.20 – 0.28	0.00 – 0.23	2.86	0.116	0.477	0.239	0.138	0.799	-0.0104 ± 0.0136 ± 0.0002	-0.0104 ± 0.0136 ± 0.0002
		0.23 – 0.36	3.17	0.116	0.531	0.238	0.292	0.743	0.0247 ± 0.0191 ± 0.0004	0.0247 ± 0.0191 ± 0.0004
		0.36 – 0.54	3.25	0.115	0.545	0.239	0.442	0.724	-0.0025 ± 0.0200 ± 0.0003	-0.0025 ± 0.0200 ± 0.0003
		0.54 – 2.00	3.54	0.116	0.593	0.244	0.645	0.671	0.0454 ± 0.0390 ± 0.0034	0.0454 ± 0.0390 ± 0.0034
	0.28 – 0.37	0.00 – 0.23	2.52	0.116	0.420	0.321	0.144	0.844	-0.0195 ± 0.0149 ± 0.0017	-0.0195 ± 0.0149 ± 0.0017
		0.23 – 0.36	2.77	0.116	0.462	0.323	0.291	0.806	-0.0349 ± 0.0197 ± 0.0002	-0.0349 ± 0.0197 ± 0.0002
		0.36 – 0.54	2.98	0.116	0.500	0.322	0.444	0.766	0.0035 ± 0.0216 ± 0.0004	0.0035 ± 0.0216 ± 0.0004
		0.54 – 2.00	3.17	0.116	0.532	0.324	0.675	0.732	-0.0038 ± 0.0265 ± 0.0024	-0.0038 ± 0.0265 ± 0.0024
	0.37 – 0.49	0.00 – 0.23	2.39	0.116	0.399	0.422	0.148	0.860	0.0476 ± 0.0175 ± 0.0037	0.0476 ± 0.0175 ± 0.0037
		0.23 – 0.36	2.48	0.116	0.413	0.425	0.293	0.845	-0.0055 ± 0.0196 ± 0.0010	-0.0055 ± 0.0196 ± 0.0010
		0.36 – 0.54	2.80	0.116	0.467	0.426	0.441	0.797	-0.0031 ± 0.0231 ± 0.0002	-0.0031 ± 0.0231 ± 0.0002
		0.54 – 2.00	3.00	0.115	0.504	0.424	0.716	0.756	-0.0098 ± 0.0246 ± 0.0029	-0.0098 ± 0.0246 ± 0.0029
	0.49 – 0.70	0.00 – 0.23	2.37	0.116	0.396	0.579	0.150	0.863	-0.0058 ± 0.0207 ± 0.0005	-0.0058 ± 0.0207 ± 0.0005
		0.23 – 0.36	2.39	0.116	0.399	0.577	0.295	0.859	0.0112 ± 0.0209 ± 0.0006	0.0112 ± 0.0209 ± 0.0006
		0.36 – 0.54	2.55	0.116	0.426	0.583	0.441	0.834	-0.0064 ± 0.0217 ± 0.0002	-0.0064 ± 0.0217 ± 0.0002
		0.54 – 2.00	2.92	0.115	0.490	0.581	0.747	0.774	-0.0041 ± 0.0253 ± 0.0002	-0.0041 ± 0.0253 ± 0.0002
0.138 – 0.600	0.20 – 0.28	0.00 – 0.23	4.91	0.204	0.467	0.239	0.141	0.811	0.0171 ± 0.0118 ± 0.0011	0.0171 ± 0.0118 ± 0.0011
		0.23 – 0.36	5.22	0.212	0.486	0.240	0.290	0.790	-0.0211 ± 0.0170 ± 0.0009	-0.0211 ± 0.0170 ± 0.0009
		0.36 – 0.54	5.18	0.205	0.499	0.239	0.443	0.775	0.0001 ± 0.0230 ± 0.0033	0.0001 ± 0.0230 ± 0.0033
		0.54 – 2.00	5.40	0.211	0.509	0.243	0.645	0.767	0.0280 ± 0.0607 ± 0.0122	0.0280 ± 0.0607 ± 0.0122
	0.28 – 0.37	0.00 – 0.23	4.41	0.199	0.426	0.321	0.148	0.842	0.0072 ± 0.0133 ± 0.0017	0.0072 ± 0.0133 ± 0.0017
		0.23 – 0.36	4.55	0.208	0.426	0.322	0.291	0.839	0.0015 ± 0.0169 ± 0.0006	0.0015 ± 0.0169 ± 0.0006
		0.36 – 0.54	4.80	0.211	0.450	0.323	0.440	0.816	0.0367 ± 0.0209 ± 0.0024	0.0367 ± 0.0209 ± 0.0024
		0.54 – 2.00	4.79	0.204	0.464	0.324	0.679	0.802	0.0555 ± 0.0341 ± 0.0021	0.0555 ± 0.0341 ± 0.0021
	0.37 – 0.49	0.00 – 0.23	4.26	0.197	0.414	0.422	0.149	0.852	-0.0070 ± 0.0157 ± 0.0023	-0.0070 ± 0.0157 ± 0.0023
		0.23 – 0.36	4.31	0.203	0.410	0.424	0.294	0.852	-0.0126 ± 0.0176 ± 0.0016	-0.0126 ± 0.0176 ± 0.0016
		0.36 – 0.54	4.59	0.212	0.423	0.425	0.438	0.840	0.0059 ± 0.0208 ± 0.0009	0.0059 ± 0.0208 ± 0.0009
		0.54 – 2.00	4.78	0.208	0.453	0.426	0.712	0.809	-0.0589 ± 0.0268 ± 0.0024	-0.0589 ± 0.0268 ± 0.0024
	0.49 – 0.70	0.00 – 0.23	4.25	0.197	0.413	0.574	0.152	0.852	-0.0078 ± 0.0194 ± 0.0030	-0.0078 ± 0.0194 ± 0.0030
		0.23 – 0.36	4.13	0.198	0.400	0.574	0.295	0.861	0.0270 ± 0.0198 ± 0.0014	0.0270 ± 0.0198 ± 0.0014
		0.36 – 0.54	4.25	0.203	0.405	0.579	0.443	0.855	0.0080 ± 0.0205 ± 0.0045	0.0080 ± 0.0205 ± 0.0045
		0.54 – 2.00	4.67	0.210	0.437	0.581	0.726	0.825	-0.0036 ± 0.0234 ± 0.0070	-0.0036 ± 0.0234 ± 0.0070

Table 58. Three-dimensionally binned SFA and CSA amplitudes of the $\sin(2\phi - \phi_S)$ modulation for π^- as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin			Average kinematics						K^+	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(2\phi - \phi_S) / \sqrt{2\epsilon(1+\epsilon)} \rangle_{U\perp}$	$2\langle \sin(2\phi - \phi_S) \rangle_{U\perp}$
0.023 – 0.072	0.20 – 0.28	0.00 – 0.23	1.48	0.052	0.565	0.239	0.149	0.705	-0.0265 ± 0.0402 ± 0.0072	-0.0265 ± 0.0402 ± 0.0072
		0.23 – 0.36	1.54	0.048	0.638	0.237	0.297	0.612	-0.0227 ± 0.0481 ± 0.0032	-0.0227 ± 0.0481 ± 0.0032
		0.36 – 0.54	1.55	0.046	0.674	0.239	0.444	0.562	-0.0156 ± 0.0267 ± 0.0004	-0.0156 ± 0.0267 ± 0.0004
		0.54 – 2.00	1.59	0.043	0.734	0.242	0.670	0.476	-0.0286 ± 0.0326 ± 0.0127	-0.0286 ± 0.0326 ± 0.0127
	0.28 – 0.37	0.00 – 0.23	1.44	0.054	0.529	0.321	0.150	0.747	-0.0287 ± 0.0420 ± 0.0055	-0.0287 ± 0.0420 ± 0.0055
		0.23 – 0.36	1.51	0.050	0.603	0.322	0.298	0.657	-0.0993 ± 0.0545 ± 0.0032	-0.0993 ± 0.0545 ± 0.0032
		0.36 – 0.54	1.54	0.047	0.645	0.322	0.448	0.601	-0.0325 ± 0.0397 ± 0.0059	-0.0325 ± 0.0397 ± 0.0059
		0.54 – 2.00	1.56	0.044	0.701	0.326	0.722	0.523	-0.0489 ± 0.0266 ± 0.0068	-0.0489 ± 0.0266 ± 0.0068
	0.37 – 0.49	0.00 – 0.23	1.43	0.055	0.511	0.422	0.148	0.769	0.0441 ± 0.0413 ± 0.0061	0.0441 ± 0.0413 ± 0.0061
		0.23 – 0.36	1.47	0.052	0.557	0.424	0.297	0.713	-0.0757 ± 0.0528 ± 0.0011	-0.0757 ± 0.0528 ± 0.0011
		0.36 – 0.54	1.51	0.050	0.608	0.424	0.449	0.651	0.0109 ± 0.0578 ± 0.0087	0.0109 ± 0.0578 ± 0.0087
		0.54 – 2.00	1.56	0.046	0.671	0.428	0.763	0.565	-0.0072 ± 0.0295 ± 0.0011	-0.0072 ± 0.0295 ± 0.0011
	0.49 – 0.70	0.00 – 0.23	1.42	0.057	0.493	0.572	0.150	0.787	-0.0248 ± 0.0497 ± 0.0071	-0.0248 ± 0.0497 ± 0.0071
		0.23 – 0.36	1.44	0.054	0.534	0.573	0.298	0.740	-0.0566 ± 0.0559 ± 0.0018	-0.0566 ± 0.0559 ± 0.0018
		0.36 – 0.54	1.49	0.051	0.587	0.576	0.452	0.675	-0.0937 ± 0.0584 ± 0.0038	-0.0937 ± 0.0584 ± 0.0038
		0.54 – 2.00	1.53	0.048	0.637	0.580	0.805	0.612	0.0125 ± 0.0343 ± 0.0011	0.0125 ± 0.0343 ± 0.0011
0.072 – 0.098	0.20 – 0.28	0.00 – 0.23	2.21	0.084	0.508	0.241	0.142	0.770	-0.0230 ± 0.0427 ± 0.0056	-0.0230 ± 0.0427 ± 0.0056
		0.23 – 0.36	2.43	0.084	0.562	0.240	0.295	0.709	-0.0360 ± 0.0545 ± 0.0104	-0.0360 ± 0.0545 ± 0.0104
		0.36 – 0.54	2.50	0.084	0.578	0.241	0.440	0.683	0.0091 ± 0.0484 ± 0.0002	0.0091 ± 0.0484 ± 0.0002
		0.54 – 2.00	2.72	0.084	0.630	0.244	0.652	0.624	0.0807 ± 0.0714 ± 0.0039	0.0807 ± 0.0714 ± 0.0039
	0.28 – 0.37	0.00 – 0.23	1.98	0.084	0.455	0.323	0.142	0.816	0.0485 ± 0.0367 ± 0.0007	0.0485 ± 0.0367 ± 0.0007
		0.23 – 0.36	2.21	0.084	0.510	0.324	0.293	0.762	0.0449 ± 0.0535 ± 0.0003	0.0449 ± 0.0535 ± 0.0003
		0.36 – 0.54	2.38	0.084	0.550	0.324	0.446	0.714	-0.0584 ± 0.0551 ± 0.0042	-0.0584 ± 0.0551 ± 0.0042
		0.54 – 2.00	2.54	0.084	0.587	0.327	0.690	0.669	-0.0869 ± 0.0472 ± 0.0065	-0.0869 ± 0.0472 ± 0.0065
	0.37 – 0.49	0.00 – 0.23	1.88	0.085	0.429	0.423	0.145	0.839	-0.0221 ± 0.0357 ± 0.0020	-0.0221 ± 0.0357 ± 0.0020
		0.23 – 0.36	2.07	0.084	0.475	0.425	0.294	0.795	-0.0381 ± 0.0475 ± 0.0006	-0.0381 ± 0.0475 ± 0.0006
		0.36 – 0.54	2.23	0.084	0.512	0.427	0.445	0.758	-0.0192 ± 0.0532 ± 0.0040	-0.0192 ± 0.0532 ± 0.0040
		0.54 – 2.00	2.44	0.084	0.566	0.430	0.735	0.695	-0.0017 ± 0.0443 ± 0.0008	-0.0017 ± 0.0443 ± 0.0008
	0.49 – 0.70	0.00 – 0.23	1.88	0.085	0.427	0.577	0.150	0.842	0.0235 ± 0.0427 ± 0.0013	0.0235 ± 0.0427 ± 0.0013
		0.23 – 0.36	1.94	0.084	0.447	0.575	0.297	0.820	0.0128 ± 0.0477 ± 0.0014	0.0128 ± 0.0477 ± 0.0014
		0.36 – 0.54	2.06	0.085	0.470	0.583	0.446	0.798	0.0813 ± 0.0453 ± 0.0041	0.0813 ± 0.0453 ± 0.0041
		0.54 – 2.00	2.33	0.084	0.538	0.587	0.768	0.728	-0.0539 ± 0.0448 ± 0.0070	-0.0539 ± 0.0448 ± 0.0070
0.098 – 0.138	0.20 – 0.28	0.00 – 0.23	2.96	0.116	0.494	0.241	0.139	0.785	0.0675 ± 0.0384 ± 0.0005	0.0675 ± 0.0384 ± 0.0005
		0.23 – 0.36	3.31	0.116	0.554	0.239	0.290	0.718	0.0436 ± 0.0545 ± 0.0090	0.0436 ± 0.0545 ± 0.0090
		0.36 – 0.54	3.25	0.115	0.548	0.240	0.443	0.720	-0.0348 ± 0.0527 ± 0.0063	-0.0348 ± 0.0527 ± 0.0063
		0.54 – 2.00	3.53	0.115	0.596	0.245	0.650	0.664	0.0836 ± 0.0973 ± 0.0059	0.0836 ± 0.0973 ± 0.0059
	0.28 – 0.37	0.00 – 0.23	2.64	0.116	0.441	0.324	0.142	0.829	0.0257 ± 0.0329 ± 0.0018	0.0257 ± 0.0329 ± 0.0018
		0.23 – 0.36	2.91	0.116	0.485	0.326	0.292	0.787	-0.1197 ± 0.0457 ± 0.0111	-0.1197 ± 0.0457 ± 0.0111
		0.36 – 0.54	3.08	0.115	0.519	0.323	0.446	0.746	-0.0296 ± 0.0507 ± 0.0041	-0.0296 ± 0.0507 ± 0.0041
		0.54 – 2.00	3.20	0.116	0.535	0.327	0.682	0.726	-0.0398 ± 0.0557 ± 0.0147	-0.0398 ± 0.0557 ± 0.0147
	0.37 – 0.49	0.00 – 0.23	2.54	0.116	0.425	0.424	0.148	0.841	-0.0230 ± 0.0341 ± 0.0030	-0.0230 ± 0.0341 ± 0.0030
		0.23 – 0.36	2.66	0.116	0.441	0.427	0.291	0.824	0.0073 ± 0.0383 ± 0.0013	0.0073 ± 0.0383 ± 0.0013
		0.36 – 0.54	3.00	0.117	0.497	0.428	0.442	0.773	0.0713 ± 0.0451 ± 0.0094	0.0713 ± 0.0451 ± 0.0094
		0.54 – 2.00	3.21	0.115	0.539	0.428	0.716	0.723	-0.0353 ± 0.0471 ± 0.0042	-0.0353 ± 0.0471 ± 0.0042
	0.49 – 0.70	0.00 – 0.23	2.47	0.116	0.412	0.574	0.150	0.851	0.0238 ± 0.0379 ± 0.0020	0.0238 ± 0.0379 ± 0.0020
		0.23 – 0.36	2.50	0.116	0.418	0.577	0.296	0.845	-0.0168 ± 0.0398 ± 0.0023	-0.0168 ± 0.0398 ± 0.0023
		0.36 – 0.54	2.70	0.116	0.451	0.583	0.443	0.815	-0.0260 ± 0.0367 ± 0.0080	-0.0260 ± 0.0367 ± 0.0080
		0.54 – 2.00	3.06	0.115	0.514	0.588	0.752	0.752	-0.0395 ± 0.0420 ± 0.0088	-0.0395 ± 0.0420 ± 0.0088
0.138 – 0.600	0.20 – 0.28	0.00 – 0.23	5.15	0.207	0.485	0.242	0.138	0.795	-0.0317 ± 0.0315 ± 0.0014	-0.0317 ± 0.0315 ± 0.0014
		0.23 – 0.36	5.33	0.208	0.505	0.243	0.292	0.773	0.0101 ± 0.0452 ± 0.0038	0.0101 ± 0.0452 ± 0.0038
		0.36 – 0.54	5.06	0.196	0.508	0.241	0.445	0.765	0.0572 ± 0.0607 ± 0.0085	0.0572 ± 0.0607 ± 0.0085
		0.54 – 2.00	5.22	0.211	0.493	0.246	0.645	0.779	0.1794 ± 0.1376 ± 0.0252	0.1794 ± 0.1376 ± 0.0252
	0.28 – 0.37	0.00 – 0.23	4.76	0.204	0.449	0.323	0.142	0.825	-0.0079 ± 0.0267 ± 0.0036	-0.0079 ± 0.0267 ± 0.0036
		0.23 – 0.36	5.01	0.211	0.462	0.325	0.289	0.810	0.0220 ± 0.0342 ± 0.0008	0.0220 ± 0.0342 ± 0.0008
		0.36 – 0.54	5.04	0.203	0.488	0.325	0.443	0.783	0.0295 ± 0.0405 ± 0.0014	0.0295 ± 0.0405 ± 0.0014
		0.54 – 2.00	4.69	0.198	0.464	0.327	0.681	0.798	-0.0287 ± 0.0690 ± 0.0092	-0.0287 ± 0.0690 ± 0.0092
	0.37 – 0.49	0.00 – 0.23	4.63	0.204	0.435	0.424	0.150	0.836	0.0297 ± 0.0268 ± 0.0026	0.0297 ± 0.0268 ± 0.0026
		0.23 – 0.36	4.62	0.204	0.437	0.425	0.292	0.831	-0.0571 ± 0.0298 ± 0.0006	-0.0571 ± 0.0298 ± 0.0006
		0.36 – 0.54	4.91	0.210	0.458	0.426	0.439	0.812	-0.0176 ± 0.0334 ± 0.0028	-0.0176 ± 0.0334 ± 0.0028
		0.54 – 2.00	5.02	0.204	0.483	0.428	0.707	0.784	-0.0100 ± 0.0450 ± 0.0006	-0.0100 ± 0.0450 ± 0.0006
	0.49 – 0.70	0.00 – 0.23	4.55	0.204	0.426	0.576	0.149	0.843	0.0146 ± 0.0308 ± 0.0048	0.0146 ± 0.0308 ± 0.0048
		0.23 – 0.36	4.52	0.206	0.422	0.577	0.296	0.844	0.0159 ± 0.0317 ± 0.0015	0.0159 ± 0.0317 ± 0.0015
		0.36 – 0.54	4.63	0.207	0.435	0.583	0.443	0.831	-0.0389 ± 0.0297 ± 0.0004	-0.0389 ± 0.0297 ± 0.0004
		0.54 – 2.00	5.06	0.210	0.473	0.589	0.731	0.796	0.0128 ± 0.0334 ± 0.0040	0.0128 ± 0.0334 ± 0.0040

Table 59. Three-dimensionally binned SFA and CSA amplitudes of the $\sin(2\phi - \phi_S)$ modulation for K^+ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin			Average kinematics						K^-	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(2\phi - \phi_S) / \sqrt{2\epsilon(1+\epsilon)} \rangle_{U\perp}$	$2\langle \sin(2\phi - \phi_S) \rangle_{U\perp}$
0.023 – 0.072	0.20 – 0.28	0.00 – 0.23	1.48	0.051	0.575	0.236	0.152	0.692	0.0417 ± 0.0579 ± 0.0055	0.0417 ± 0.0579 ± 0.0055
		0.23 – 0.36	1.51	0.047	0.646	0.236	0.298	0.601	-0.0077 ± 0.0586 ± 0.0021	-0.0077 ± 0.0586 ± 0.0021
		0.36 – 0.54	1.54	0.045	0.684	0.237	0.444	0.547	-0.0373 ± 0.0343 ± 0.0026	-0.0373 ± 0.0343 ± 0.0026
		0.54 – 2.00	1.61	0.043	0.744	0.242	0.666	0.461	0.0649 ± 0.0416 ± 0.0015	0.0649 ± 0.0416 ± 0.0015
	0.28 – 0.37	0.00 – 0.23	1.45	0.053	0.537	0.319	0.151	0.738	0.0936 ± 0.0584 ± 0.0032	0.0936 ± 0.0584 ± 0.0032
		0.23 – 0.36	1.50	0.049	0.608	0.320	0.296	0.650	0.1587 ± 0.0819 ± 0.0035	0.1587 ± 0.0819 ± 0.0035
		0.36 – 0.54	1.51	0.047	0.644	0.319	0.449	0.602	0.0206 ± 0.0528 ± 0.0070	0.0206 ± 0.0528 ± 0.0070
		0.54 – 2.00	1.56	0.044	0.701	0.324	0.724	0.523	-0.0351 ± 0.0358 ± 0.0023	-0.0351 ± 0.0358 ± 0.0023
	0.37 – 0.49	0.00 – 0.23	1.40	0.054	0.513	0.424	0.146	0.768	-0.0328 ± 0.0636 ± 0.0078	-0.0328 ± 0.0636 ± 0.0078
		0.23 – 0.36	1.48	0.051	0.579	0.422	0.298	0.689	0.0004 ± 0.0852 ± 0.0060	0.0004 ± 0.0852 ± 0.0060
		0.36 – 0.54	1.53	0.049	0.622	0.423	0.448	0.633	-0.0684 ± 0.0894 ± 0.0054	-0.0684 ± 0.0894 ± 0.0054
		0.54 – 2.00	1.54	0.045	0.674	0.425	0.770	0.562	0.0714 ± 0.0409 ± 0.0010	0.0714 ± 0.0409 ± 0.0010
	0.49 – 0.70	0.00 – 0.23	1.41	0.055	0.508	0.562	0.151	0.771	0.0605 ± 0.0735 ± 0.0022	0.0605 ± 0.0735 ± 0.0022
		0.23 – 0.36	1.44	0.052	0.550	0.566	0.298	0.721	0.1087 ± 0.0828 ± 0.0107	0.1087 ± 0.0828 ± 0.0107
		0.36 – 0.54	1.49	0.050	0.595	0.572	0.446	0.664	0.0914 ± 0.0854 ± 0.0091	0.0914 ± 0.0854 ± 0.0091
		0.54 – 2.00	1.53	0.046	0.662	0.569	0.799	0.578	0.0629 ± 0.0615 ± 0.0018	0.0629 ± 0.0615 ± 0.0018
0.072 – 0.098	0.20 – 0.28	0.00 – 0.23	2.18	0.084	0.503	0.239	0.139	0.775	0.0451 ± 0.0584 ± 0.0062	0.0451 ± 0.0584 ± 0.0062
		0.23 – 0.36	2.46	0.084	0.568	0.237	0.294	0.701	-0.0637 ± 0.0853 ± 0.0030	-0.0637 ± 0.0853 ± 0.0030
		0.36 – 0.54	2.54	0.084	0.586	0.237	0.440	0.677	-0.0250 ± 0.0625 ± 0.0011	-0.0250 ± 0.0625 ± 0.0011
		0.54 – 2.00	2.75	0.084	0.637	0.242	0.648	0.614	0.0399 ± 0.1008 ± 0.0083	0.0399 ± 0.1008 ± 0.0083
	0.28 – 0.37	0.00 – 0.23	1.95	0.084	0.448	0.323	0.138	0.824	-0.0299 ± 0.0519 ± 0.0071	-0.0299 ± 0.0519 ± 0.0071
		0.23 – 0.36	2.24	0.084	0.518	0.322	0.292	0.752	-0.1478 ± 0.0923 ± 0.0013	-0.1478 ± 0.0923 ± 0.0013
		0.36 – 0.54	2.40	0.084	0.555	0.321	0.444	0.712	0.0140 ± 0.0779 ± 0.0015	0.0140 ± 0.0779 ± 0.0015
		0.54 – 2.00	2.48	0.084	0.573	0.324	0.693	0.689	-0.0102 ± 0.0724 ± 0.0041	-0.0102 ± 0.0724 ± 0.0041
	0.37 – 0.49	0.00 – 0.23	1.84	0.084	0.426	0.424	0.143	0.842	0.0034 ± 0.0601 ± 0.0037	0.0034 ± 0.0601 ± 0.0037
		0.23 – 0.36	2.06	0.084	0.475	0.424	0.294	0.794	0.0501 ± 0.0693 ± 0.0055	0.0501 ± 0.0693 ± 0.0055
		0.36 – 0.54	2.27	0.083	0.528	0.424	0.443	0.743	0.0136 ± 0.0855 ± 0.0086	0.0136 ± 0.0855 ± 0.0086
		0.54 – 2.00	2.45	0.084	0.566	0.423	0.727	0.695	0.0438 ± 0.0763 ± 0.0014	0.0438 ± 0.0763 ± 0.0014
	0.49 – 0.70	0.00 – 0.23	1.89	0.085	0.431	0.567	0.150	0.837	0.0155 ± 0.0776 ± 0.0087	0.0155 ± 0.0776 ± 0.0087
		0.23 – 0.36	2.00	0.085	0.455	0.570	0.295	0.811	-0.1284 ± 0.0739 ± 0.0038	-0.1284 ± 0.0739 ± 0.0038
		0.36 – 0.54	2.16	0.084	0.495	0.577	0.440	0.775	-0.1257 ± 0.0907 ± 0.0033	-0.1257 ± 0.0907 ± 0.0033
		0.54 – 2.00	2.42	0.084	0.556	0.570	0.772	0.707	0.0287 ± 0.0855 ± 0.0050	0.0287 ± 0.0855 ± 0.0050
0.098 – 0.138	0.20 – 0.28	0.00 – 0.23	3.02	0.116	0.505	0.240	0.138	0.774	0.0715 ± 0.0522 ± 0.0034	0.0715 ± 0.0522 ± 0.0034
		0.23 – 0.36	3.26	0.115	0.549	0.241	0.290	0.727	-0.0306 ± 0.0803 ± 0.0047	-0.0306 ± 0.0803 ± 0.0047
		0.36 – 0.54	3.30	0.115	0.556	0.238	0.444	0.713	-0.0104 ± 0.0710 ± 0.0058	-0.0104 ± 0.0710 ± 0.0058
		0.54 – 2.00	3.61	0.115	0.607	0.243	0.649	0.655	-0.0824 ± 0.1362 ± 0.0039	-0.0824 ± 0.1362 ± 0.0039
	0.28 – 0.37	0.00 – 0.23	2.69	0.116	0.450	0.323	0.142	0.819	0.0618 ± 0.0540 ± 0.0013	0.0618 ± 0.0540 ± 0.0013
		0.23 – 0.36	2.98	0.116	0.501	0.322	0.294	0.769	0.0065 ± 0.0741 ± 0.0023	0.0065 ± 0.0741 ± 0.0023
		0.36 – 0.54	3.06	0.115	0.516	0.324	0.450	0.750	-0.0897 ± 0.0791 ± 0.0031	-0.0897 ± 0.0791 ± 0.0031
		0.54 – 2.00	3.34	0.116	0.559	0.324	0.694	0.703	-0.0661 ± 0.0837 ± 0.0101	-0.0661 ± 0.0837 ± 0.0101
	0.37 – 0.49	0.00 – 0.23	2.42	0.115	0.408	0.423	0.149	0.854	-0.0517 ± 0.0556 ± 0.0005	-0.0517 ± 0.0556 ± 0.0005
		0.23 – 0.36	2.69	0.117	0.447	0.427	0.293	0.819	-0.0147 ± 0.0660 ± 0.0131	-0.0147 ± 0.0660 ± 0.0131
		0.36 – 0.54	2.94	0.116	0.491	0.428	0.442	0.778	0.0472 ± 0.0785 ± 0.0068	0.0472 ± 0.0785 ± 0.0068
		0.54 – 2.00	3.19	0.114	0.540	0.424	0.741	0.723	0.0773 ± 0.0718 ± 0.0041	0.0773 ± 0.0718 ± 0.0041
	0.49 – 0.70	0.00 – 0.23	2.43	0.115	0.407	0.563	0.149	0.854	-0.0114 ± 0.0738 ± 0.0079	-0.0114 ± 0.0738 ± 0.0079
		0.23 – 0.36	2.47	0.115	0.416	0.572	0.295	0.848	0.0579 ± 0.0714 ± 0.0075	0.0579 ± 0.0714 ± 0.0075
		0.36 – 0.54	2.72	0.116	0.453	0.577	0.435	0.813	0.0693 ± 0.0769 ± 0.0038	0.0693 ± 0.0769 ± 0.0038
		0.54 – 2.00	3.08	0.115	0.517	0.574	0.764	0.750	0.0437 ± 0.0846 ± 0.0057	0.0437 ± 0.0846 ± 0.0057
0.138 – 0.600	0.20 – 0.28	0.00 – 0.23	4.98	0.201	0.481	0.241	0.144	0.800	0.0038 ± 0.0425 ± 0.0008	0.0038 ± 0.0425 ± 0.0008
		0.23 – 0.36	5.30	0.206	0.507	0.241	0.290	0.770	-0.0506 ± 0.0637 ± 0.0037	-0.0506 ± 0.0637 ± 0.0037
		0.36 – 0.54	5.32	0.204	0.518	0.239	0.449	0.757	-0.1588 ± 0.0792 ± 0.0200	-0.1588 ± 0.0792 ± 0.0200
		0.54 – 2.00	5.44	0.205	0.527	0.245	0.663	0.747	-0.0984 ± 0.2107 ± 0.0023	-0.0984 ± 0.2107 ± 0.0023
	0.28 – 0.37	0.00 – 0.23	4.71	0.203	0.451	0.322	0.146	0.822	-0.0390 ± 0.0432 ± 0.0029	-0.0390 ± 0.0432 ± 0.0029
		0.23 – 0.36	4.92	0.209	0.462	0.325	0.291	0.809	-0.1265 ± 0.0538 ± 0.0057	-0.1265 ± 0.0538 ± 0.0057
		0.36 – 0.54	4.90	0.205	0.473	0.325	0.441	0.795	0.0243 ± 0.0693 ± 0.0008	0.0243 ± 0.0693 ± 0.0008
		0.54 – 2.00	5.07	0.200	0.503	0.324	0.691	0.765	-0.0234 ± 0.0971 ± 0.0142	-0.0234 ± 0.0971 ± 0.0142
	0.37 – 0.49	0.00 – 0.23	4.35	0.195	0.430	0.420	0.149	0.839	0.0429 ± 0.0546 ± 0.0027	0.0429 ± 0.0546 ± 0.0027
		0.23 – 0.36	4.49	0.205	0.422	0.423	0.293	0.843	0.0564 ± 0.0595 ± 0.0110	0.0564 ± 0.0595 ± 0.0110
		0.36 – 0.54	4.75	0.207	0.450	0.426	0.437	0.817	-0.0451 ± 0.0640 ± 0.0030	-0.0451 ± 0.0640 ± 0.0030
		0.54 – 2.00	4.87	0.203	0.474	0.425	0.728	0.792	0.0218 ± 0.0784 ± 0.0011	0.0218 ± 0.0784 ± 0.0011
	0.49 – 0.70	0.00 – 0.23	4.39	0.196	0.432	0.562	0.154	0.839	-0.0447 ± 0.0685 ± 0.0047	-0.0447 ± 0.0685 ± 0.0047
		0.23 – 0.36	4.35	0.201	0.419	0.571	0.294	0.846	-0.0034 ± 0.0741 ± 0.0077	-0.0034 ± 0.0741 ± 0.0077
		0.36 – 0.54	4.56	0.207	0.429	0.577	0.440	0.838	-0.0126 ± 0.0655 ± 0.0095	-0.0126 ± 0.0655 ± 0.0095
		0.54 – 2.00	4.85	0.204	0.470	0.579	0.735	0.796	0.0505 ± 0.0685 ± 0.0031	0.0505 ± 0.0685 ± 0.0031

Table 60. Three-dimensionally binned SFA and CSA amplitudes of the $\sin(2\phi - \phi_S)$ modulation for K^- as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin			Average kinematics						p	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(2\phi - \phi_S) / \sqrt{2\epsilon(1+\epsilon)} \rangle_{U\perp}$	$2\langle \sin(2\phi - \phi_S) \rangle_{U\perp}$
0.023 – 0.073	0.20 – 0.34	0.00 – 0.24	1.60	0.048	0.656	0.281	0.167	0.598	-0.0052 ± 0.0665 ± 0.0219	-0.0052 ± 0.0665 ± 0.0219
		0.24 – 0.40	1.61	0.045	0.698	0.274	0.327	0.535	0.0056 ± 0.0547 ± 0.0046	0.0056 ± 0.0547 ± 0.0046
		0.40 – 0.57	1.60	0.044	0.713	0.271	0.483	0.512	-0.0208 ± 0.0315 ± 0.0047	-0.0208 ± 0.0315 ± 0.0047
		0.57 – 2.00	1.60	0.043	0.734	0.276	0.728	0.480	0.0252 ± 0.0239 ± 0.0037	0.0252 ± 0.0239 ± 0.0037
	0.34 – 0.43	0.00 – 0.24	1.48	0.053	0.544	0.384	0.157	0.736	0.0373 ± 0.0457 ± 0.0019	0.0373 ± 0.0457 ± 0.0019
		0.24 – 0.40	1.51	0.050	0.603	0.384	0.322	0.659	-0.0077 ± 0.0630 ± 0.0029	-0.0077 ± 0.0630 ± 0.0029
		0.40 – 0.57	1.54	0.049	0.632	0.383	0.483	0.620	-0.0073 ± 0.0579 ± 0.0139	-0.0073 ± 0.0579 ± 0.0139
		0.57 – 2.00	1.54	0.046	0.669	0.384	0.766	0.568	0.0306 ± 0.0294 ± 0.0049	0.0306 ± 0.0294 ± 0.0049
	0.43 – 0.52	0.00 – 0.24	1.43	0.056	0.503	0.473	0.159	0.777	-0.0550 ± 0.0504 ± 0.0068	-0.0550 ± 0.0504 ± 0.0068
		0.24 – 0.40	1.47	0.052	0.567	0.471	0.322	0.699	0.0597 ± 0.0578 ± 0.0023	0.0597 ± 0.0578 ± 0.0023
		0.40 – 0.57	1.50	0.050	0.597	0.472	0.481	0.663	0.0593 ± 0.0716 ± 0.0051	0.0593 ± 0.0716 ± 0.0051
		0.57 – 2.00	1.52	0.047	0.641	0.471	0.796	0.604	-0.0104 ± 0.0408 ± 0.0133	-0.0104 ± 0.0408 ± 0.0133
	0.52 – 0.70	0.00 – 0.24	1.40	0.057	0.487	0.588	0.153	0.795	0.0266 ± 0.0555 ± 0.0081	0.0266 ± 0.0555 ± 0.0081
		0.24 – 0.40	1.45	0.055	0.527	0.587	0.321	0.747	0.1028 ± 0.0610 ± 0.0117	0.1028 ± 0.0610 ± 0.0117
		0.40 – 0.57	1.46	0.052	0.561	0.589	0.482	0.707	-0.0900 ± 0.0692 ± 0.0076	-0.0900 ± 0.0692 ± 0.0076
		0.57 – 2.00	1.50	0.049	0.607	0.591	0.808	0.649	0.0167 ± 0.0484 ± 0.0150	0.0167 ± 0.0484 ± 0.0150
0.073 – 0.107	0.20 – 0.34	0.00 – 0.24	2.83	0.089	0.617	0.293	0.158	0.653	0.0121 ± 0.0656 ± 0.0098	0.0121 ± 0.0656 ± 0.0098
		0.24 – 0.40	2.91	0.088	0.638	0.285	0.321	0.624	-0.1081 ± 0.0750 ± 0.0011	-0.1081 ± 0.0750 ± 0.0011
		0.40 – 0.57	3.01	0.088	0.661	0.279	0.481	0.592	-0.0626 ± 0.0610 ± 0.0068	-0.0626 ± 0.0610 ± 0.0068
		0.57 – 2.00	3.03	0.088	0.666	0.282	0.718	0.584	0.0170 ± 0.0504 ± 0.0028	0.0170 ± 0.0504 ± 0.0028
	0.34 – 0.43	0.00 – 0.24	2.34	0.089	0.509	0.385	0.148	0.775	-0.0146 ± 0.0434 ± 0.0052	-0.0146 ± 0.0434 ± 0.0052
		0.24 – 0.40	2.49	0.088	0.545	0.385	0.317	0.732	-0.0626 ± 0.0541 ± 0.0085	-0.0626 ± 0.0541 ± 0.0085
		0.40 – 0.57	2.53	0.088	0.558	0.385	0.480	0.717	0.0997 ± 0.0678 ± 0.0001	0.0997 ± 0.0678 ± 0.0001
		0.57 – 2.00	2.63	0.088	0.575	0.385	0.744	0.694	-0.0679 ± 0.0452 ± 0.0095	-0.0679 ± 0.0452 ± 0.0095
	0.43 – 0.52	0.00 – 0.24	2.10	0.089	0.458	0.473	0.155	0.817	0.0590 ± 0.0424 ± 0.0036	0.0590 ± 0.0424 ± 0.0036
		0.24 – 0.40	2.22	0.088	0.485	0.473	0.319	0.789	-0.0562 ± 0.0459 ± 0.0054	-0.0562 ± 0.0459 ± 0.0054
		0.40 – 0.57	2.34	0.088	0.515	0.474	0.477	0.759	0.0636 ± 0.0624 ± 0.0036	0.0636 ± 0.0624 ± 0.0036
		0.57 – 2.00	2.45	0.088	0.538	0.472	0.773	0.731	-0.0290 ± 0.0522 ± 0.0005	-0.0290 ± 0.0522 ± 0.0005
	0.52 – 0.70	0.00 – 0.24	1.89	0.089	0.410	0.592	0.156	0.856	0.0449 ± 0.0427 ± 0.0015	0.0449 ± 0.0427 ± 0.0015
		0.24 – 0.40	1.95	0.089	0.427	0.593	0.320	0.839	0.0012 ± 0.0414 ± 0.0035	0.0012 ± 0.0414 ± 0.0035
		0.40 – 0.57	2.05	0.088	0.450	0.594	0.481	0.817	0.0421 ± 0.0545 ± 0.0096	0.0421 ± 0.0545 ± 0.0096
		0.57 – 2.00	2.24	0.088	0.494	0.598	0.781	0.772	-0.0754 ± 0.0518 ± 0.0045	-0.0754 ± 0.0518 ± 0.0045
0.107 – 0.157	0.20 – 0.34	0.00 – 0.24	3.97	0.128	0.600	0.295	0.156	0.677	-0.0316 ± 0.0600 ± 0.0056	-0.0316 ± 0.0600 ± 0.0056
		0.24 – 0.40	4.13	0.129	0.622	0.288	0.321	0.648	-0.0564 ± 0.0717 ± 0.0185	-0.0564 ± 0.0717 ± 0.0185
		0.40 – 0.57	4.27	0.128	0.644	0.283	0.481	0.617	-0.0240 ± 0.0724 ± 0.0126	-0.0240 ± 0.0724 ± 0.0126
		0.57 – 2.00	4.24	0.127	0.646	0.288	0.719	0.613	-0.0639 ± 0.0678 ± 0.0054	-0.0639 ± 0.0678 ± 0.0054
	0.34 – 0.43	0.00 – 0.24	3.38	0.130	0.504	0.387	0.152	0.780	-0.0730 ± 0.0421 ± 0.0023	-0.0730 ± 0.0421 ± 0.0023
		0.24 – 0.40	3.48	0.129	0.523	0.388	0.316	0.759	0.0115 ± 0.0450 ± 0.0074	0.0115 ± 0.0450 ± 0.0074
		0.40 – 0.57	3.69	0.128	0.555	0.386	0.477	0.722	0.0572 ± 0.0589 ± 0.0052	0.0572 ± 0.0589 ± 0.0052
		0.57 – 2.00	3.71	0.127	0.563	0.385	0.754	0.712	0.0397 ± 0.0625 ± 0.0044	0.0397 ± 0.0625 ± 0.0044
	0.43 – 0.52	0.00 – 0.24	3.06	0.129	0.457	0.474	0.156	0.820	-0.0088 ± 0.0398 ± 0.0044	-0.0088 ± 0.0398 ± 0.0044
		0.24 – 0.40	3.14	0.130	0.469	0.475	0.317	0.807	-0.0437 ± 0.0419 ± 0.0073	-0.0437 ± 0.0419 ± 0.0073
		0.40 – 0.57	3.29	0.129	0.492	0.472	0.478	0.784	0.0381 ± 0.0537 ± 0.0048	0.0381 ± 0.0537 ± 0.0048
		0.57 – 2.00	3.45	0.128	0.524	0.473	0.771	0.747	-0.0570 ± 0.0649 ± 0.0065	-0.0570 ± 0.0649 ± 0.0065
	0.52 – 0.70	0.00 – 0.24	2.75	0.129	0.413	0.594	0.154	0.852	0.0410 ± 0.0413 ± 0.0014	0.0410 ± 0.0413 ± 0.0014
		0.24 – 0.40	2.77	0.129	0.415	0.594	0.320	0.848	0.0323 ± 0.0385 ± 0.0099	0.0323 ± 0.0385 ± 0.0099
		0.40 – 0.57	2.85	0.130	0.425	0.602	0.479	0.840	0.0265 ± 0.0487 ± 0.0094	0.0265 ± 0.0487 ± 0.0094
		0.57 – 2.00	3.17	0.129	0.476	0.602	0.769	0.788	-0.0010 ± 0.0574 ± 0.0064	-0.0010 ± 0.0574 ± 0.0064
0.157 – 0.600	0.20 – 0.34	0.00 – 0.24	6.65	0.229	0.566	0.301	0.155	0.717	-0.0481 ± 0.0495 ± 0.0093	-0.0481 ± 0.0495 ± 0.0093
		0.24 – 0.40	6.49	0.219	0.579	0.298	0.317	0.703	-0.0417 ± 0.0544 ± 0.0068	-0.0417 ± 0.0544 ± 0.0068
		0.40 – 0.57	6.54	0.211	0.608	0.290	0.476	0.664	0.0149 ± 0.0721 ± 0.0088	0.0149 ± 0.0721 ± 0.0088
		0.57 – 2.00	6.59	0.216	0.597	0.292	0.719	0.678	0.1218 ± 0.1173 ± 0.0083	0.1218 ± 0.1173 ± 0.0083
	0.34 – 0.43	0.00 – 0.24	5.84	0.231	0.492	0.386	0.154	0.793	0.0338 ± 0.0359 ± 0.0063	0.0338 ± 0.0359 ± 0.0063
		0.24 – 0.40	5.96	0.233	0.499	0.387	0.315	0.786	-0.0448 ± 0.0394 ± 0.0067	-0.0448 ± 0.0394 ± 0.0067
		0.40 – 0.57	5.97	0.230	0.509	0.389	0.473	0.774	0.0531 ± 0.0548 ± 0.0239	0.0531 ± 0.0548 ± 0.0239
		0.57 – 2.00	6.10	0.235	0.511	0.386	0.764	0.771	0.0755 ± 0.0825 ± 0.0333	0.0755 ± 0.0825 ± 0.0333
	0.43 – 0.52	0.00 – 0.24	5.22	0.228	0.444	0.474	0.153	0.833	-0.0493 ± 0.0363 ± 0.0144	-0.0493 ± 0.0363 ± 0.0144
		0.24 – 0.40	5.38	0.234	0.450	0.473	0.316	0.826	-0.0073 ± 0.0382 ± 0.0020	-0.0073 ± 0.0382 ± 0.0020
		0.40 – 0.57	5.47	0.234	0.458	0.476	0.476	0.818	-0.0238 ± 0.0523 ± 0.0097	-0.0238 ± 0.0523 ± 0.0097
		0.57 – 2.00	5.60	0.237	0.467	0.476	0.756	0.805	0.0015 ± 0.0730 ± 0.0397	0.0015 ± 0.0730 ± 0.0397
	0.52 – 0.70	0.00 – 0.24	4.95	0.223	0.426	0.593	0.156	0.844	-0.0078 ± 0.0382 ± 0.0001	-0.0078 ± 0.0382 ± 0.0001
		0.24 – 0.40	4.89	0.229	0.411	0.594	0.319	0.855	0.0305 ± 0.0382 ± 0.0027	0.0305 ± 0.0382 ± 0.0027
		0.40 – 0.57	4.88	0.231	0.411	0.599	0.479	0.853	0.0814 ± 0.0475 ± 0.0020	0.0814 ± 0.0475 ± 0.0020
		0.57 – 2.00	5.07	0.233	0.427	0.604	0.749	0.837	0.0962 ± 0.0560 ± 0.0034	0.0962 ± 0.0560 ± 0.0034

Table 61. Three-dimensionally binned SFA and CSA amplitudes of the $\sin(2\phi - \phi_S)$ modulation for p as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

5.6 $\sin(\phi_S)$ modulation

Kinematic bin		Average kinematics						π^+	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(\phi_S) / \sqrt{2\epsilon(1+\epsilon)} \rangle_{U\perp}$	$2\langle \sin(\phi_S) \rangle_{U\perp}$
x	0.023 – 0.046	1.29	0.036	0.702	0.336	0.486	0.526	0.0192 ± 0.0070 ± 0.0045	0.0256 ± 0.0091 ± 0.0056
	0.046 – 0.067	1.64	0.056	0.567	0.356	0.408	0.700	-0.0026 ± 0.0055 ± 0.0032	-0.0065 ± 0.0084 ± 0.0050
	0.067 – 0.082	1.98	0.074	0.516	0.366	0.375	0.752	0.0039 ± 0.0065 ± 0.0024	0.0070 ± 0.0104 ± 0.0039
	0.082 – 0.105	2.34	0.093	0.489	0.374	0.358	0.778	-0.0031 ± 0.0056 ± 0.0027	-0.0063 ± 0.0091 ± 0.0050
	0.082 – 0.105	2.34	0.093	0.489	0.374	0.358	0.778	-0.0031 ± 0.0056 ± 0.0027	-0.0063 ± 0.0091 ± 0.0050
	0.105 – 0.134	2.87	0.118	0.469	0.379	0.348	0.796	-0.0023 ± 0.0056 ± 0.0022	-0.0026 ± 0.0092 ± 0.0049
	0.134 – 0.186	3.69	0.157	0.456	0.379	0.342	0.811	0.0054 ± 0.0053 ± 0.0015	0.0101 ± 0.0088 ± 0.0042
	0.186 – 0.600	5.71	0.254	0.437	0.375	0.343	0.832	0.0128 ± 0.0056 ± 0.0020	0.0239 ± 0.0092 ± 0.0044
z	0.200 – 0.260	2.44	0.087	0.594	0.229	0.344	0.661	0.0005 ± 0.0042 ± 0.0038	0.0007 ± 0.0063 ± 0.0062
	0.260 – 0.320	2.46	0.094	0.556	0.289	0.371	0.702	0.0025 ± 0.0045 ± 0.0063	0.0043 ± 0.0071 ± 0.0100
	0.320 – 0.380	2.45	0.098	0.533	0.349	0.394	0.725	-0.0014 ± 0.0051 ± 0.0102	-0.0007 ± 0.0082 ± 0.0164
	0.380 – 0.450	2.45	0.100	0.520	0.413	0.418	0.740	0.0066 ± 0.0056 ± 0.0140	0.0112 ± 0.0090 ± 0.0233
	0.450 – 0.520	2.44	0.101	0.508	0.483	0.441	0.753	0.0121 ± 0.0065 ± 0.0164	0.0201 ± 0.0108 ± 0.0276
	0.450 – 0.520	2.44	0.101	0.508	0.483	0.441	0.753	0.0121 ± 0.0065 ± 0.0164	0.0201 ± 0.0108 ± 0.0276
	0.520 – 0.600	2.43	0.102	0.499	0.558	0.460	0.763	0.0147 ± 0.0072 ± 0.0183	0.0271 ± 0.0121 ± 0.0318
	0.600 – 0.700	2.41	0.104	0.481	0.647	0.466	0.785	0.0079 ± 0.0078 ± 0.0232	0.0172 ± 0.0133 ± 0.0412
	0.700 – 0.760	2.41	0.107	0.457	0.729	0.453	0.813	0.0348 ± 0.0117 ± 0.0238	0.0631 ± 0.0205 ± 0.0434
	0.760 – 0.840	2.35	0.108	0.434	0.798	0.433	0.837	0.0612 ± 0.0117 ± 0.0223	0.1076 ± 0.0206 ± 0.0409
	0.840 – 1.200	2.31	0.116	0.394	0.916	0.376	0.872	0.1213 ± 0.0104 ± 0.0133	0.2191 ± 0.0186 ± 0.0241
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.56	0.110	0.460	0.341	0.110	0.813	0.0196 ± 0.0050 ± 0.0044	0.0348 ± 0.0086 ± 0.0079
	0.170 – 0.250	2.56	0.108	0.489	0.350	0.211	0.779	0.0096 ± 0.0054 ± 0.0060	0.0198 ± 0.0093 ± 0.0122
	0.250 – 0.310	2.52	0.103	0.514	0.354	0.280	0.750	0.0088 ± 0.0063 ± 0.0065	0.0173 ± 0.0105 ± 0.0123
	0.310 – 0.380	2.46	0.097	0.540	0.355	0.345	0.721	-0.0087 ± 0.0059 ± 0.0036	-0.0154 ± 0.0095 ± 0.0060
	0.310 – 0.380	2.46	0.097	0.540	0.355	0.345	0.721	-0.0087 ± 0.0059 ± 0.0036	-0.0154 ± 0.0095 ± 0.0060
	0.380 – 0.520	2.39	0.090	0.570	0.356	0.446	0.686	-0.0010 ± 0.0045 ± 0.0012	0.0003 ± 0.0070 ± 0.0029
	0.520 – 0.690	2.34	0.084	0.601	0.373	0.594	0.648	-0.0006 ± 0.0055 ± 0.0014	-0.0021 ± 0.0080 ± 0.0008
	0.690 – 2.000	2.30	0.076	0.642	0.429	0.849	0.597	0.0057 ± 0.0072 ± 0.0028	0.0106 ± 0.0099 ± 0.0009

Table 62. One-dimensionally binned SFA and CSA amplitudes of the $\sin(\phi_S)$ modulation for π^+ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin		Average kinematics						π^0	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(\phi_S)/\sqrt{2\epsilon(1+\epsilon)} \rangle_{U\perp}$	$2\langle \sin(\phi_S) \rangle_{U\perp}$
x	0.023 – 0.046	1.30	0.036	0.712	0.325	0.492	0.512	0.0244 ± 0.0223 ± 0.0024	0.0325 ± 0.0304 ± 0.0044
	0.046 – 0.067	1.72	0.056	0.597	0.352	0.406	0.665	0.0037 ± 0.0172 ± 0.0023	-0.0021 ± 0.0264 ± 0.0038
	0.067 – 0.082	2.14	0.074	0.558	0.366	0.374	0.708	-0.0191 ± 0.0201 ± 0.0030	-0.0292 ± 0.0318 ± 0.0049
	0.082 – 0.105	2.58	0.093	0.538	0.372	0.353	0.731	-0.0132 ± 0.0170 ± 0.0030	-0.0230 ± 0.0272 ± 0.0054
	0.082 – 0.105	2.58	0.093	0.538	0.372	0.353	0.731	-0.0132 ± 0.0170 ± 0.0030	-0.0230 ± 0.0272 ± 0.0054
	0.105 – 0.134	3.19	0.118	0.522	0.378	0.338	0.749	-0.0087 ± 0.0175 ± 0.0026	-0.0190 ± 0.0285 ± 0.0038
	0.134 – 0.186	4.10	0.156	0.507	0.380	0.323	0.766	-0.0198 ± 0.0158 ± 0.0023	-0.0349 ± 0.0260 ± 0.0039
	0.186 – 0.600	6.14	0.249	0.479	0.386	0.326	0.797	-0.0026 ± 0.0166 ± 0.0035	-0.0091 ± 0.0271 ± 0.0046
z	0.200 – 0.260	2.45	0.078	0.648	0.229	0.337	0.598	-0.0238 ± 0.0192 ± 0.0095	-0.0320 ± 0.0271 ± 0.0167
	0.260 – 0.320	2.49	0.085	0.609	0.289	0.372	0.645	-0.0210 ± 0.0157 ± 0.0097	-0.0232 ± 0.0232 ± 0.0172
	0.320 – 0.380	2.52	0.090	0.581	0.348	0.401	0.679	-0.0048 ± 0.0157 ± 0.0104	-0.0078 ± 0.0241 ± 0.0181
	0.380 – 0.450	2.53	0.095	0.558	0.413	0.427	0.705	0.0019 ± 0.0146 ± 0.0104	0.0024 ± 0.0233 ± 0.0178
	0.450 – 0.520	2.55	0.099	0.537	0.483	0.450	0.728	0.0007 ± 0.0154 ± 0.0109	-0.0084 ± 0.0253 ± 0.0196
	0.450 – 0.520	2.55	0.099	0.537	0.483	0.450	0.728	0.0007 ± 0.0154 ± 0.0109	-0.0084 ± 0.0253 ± 0.0196
	0.520 – 0.600	2.57	0.102	0.517	0.557	0.469	0.750	0.0004 ± 0.0159 ± 0.0149	0.0061 ± 0.0270 ± 0.0261
	0.600 – 0.700	2.59	0.106	0.496	0.645	0.483	0.774	-0.0121 ± 0.0167 ± 0.0138	-0.0186 ± 0.0287 ± 0.0247
	0.700 – 0.760	2.61	0.112	0.472	0.728	0.494	0.799	-0.0006 ± 0.0259 ± 0.0133	0.0050 ± 0.0447 ± 0.0246
	0.760 – 0.840	2.66	0.116	0.457	0.796	0.488	0.815	0.0138 ± 0.0280 ± 0.0115	0.0185 ± 0.0489 ± 0.0212
	0.840 – 1.200	2.56	0.121	0.418	0.908	0.478	0.849	0.0440 ± 0.0311 ± 0.0092	0.0863 ± 0.0546 ± 0.0164
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.82	0.114	0.481	0.338	0.111	0.799	-0.0001 ± 0.0187 ± 0.0105	0.0038 ± 0.0329 ± 0.0167
	0.170 – 0.250	2.69	0.103	0.529	0.340	0.211	0.745	-0.0300 ± 0.0188 ± 0.0099	-0.0576 ± 0.0332 ± 0.0154
	0.250 – 0.310	2.59	0.095	0.563	0.343	0.280	0.705	-0.0386 ± 0.0204 ± 0.0095	-0.0717 ± 0.0359 ± 0.0143
	0.310 – 0.380	2.49	0.088	0.591	0.347	0.345	0.668	-0.0095 ± 0.0200 ± 0.0108	-0.0122 ± 0.0346 ± 0.0172
	0.310 – 0.380	2.49	0.088	0.591	0.347	0.345	0.668	-0.0095 ± 0.0200 ± 0.0108	-0.0122 ± 0.0346 ± 0.0172
	0.380 – 0.520	2.39	0.081	0.624	0.353	0.446	0.625	0.0003 ± 0.0135 ± 0.0104	-0.0067 ± 0.0217 ± 0.0156
	0.520 – 0.690	2.30	0.074	0.652	0.371	0.595	0.587	-0.0095 ± 0.0140 ± 0.0112	-0.0075 ± 0.0213 ± 0.0159
	0.690 – 2.000	2.27	0.071	0.675	0.428	0.849	0.554	0.0019 ± 0.0153 ± 0.0109	-0.0063 ± 0.0215 ± 0.0148

Table 63. One-dimensionally binned SFA and CSA amplitudes of the $\sin(\phi_S)$ modulation for π^0 as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin		Average kinematics						π^-	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(\phi_S)/\sqrt{2\epsilon(1+\epsilon)} \rangle_{U\perp}$	$2\langle \sin(\phi_S) \rangle_{U\perp}$
x	0.023 – 0.046	1.29	0.036	0.704	0.330	0.481	0.524	-0.0029 ± 0.0077 ± 0.0062	-0.0038 ± 0.0101 ± 0.0068
	0.046 – 0.067	1.64	0.056	0.568	0.350	0.402	0.699	-0.0202 ± 0.0062 ± 0.0056	-0.0296 ± 0.0095 ± 0.0072
	0.067 – 0.082	1.98	0.074	0.515	0.359	0.369	0.752	-0.0165 ± 0.0075 ± 0.0068	-0.0240 ± 0.0120 ± 0.0098
	0.082 – 0.105	2.33	0.093	0.487	0.366	0.354	0.779	-0.0094 ± 0.0066 ± 0.0058	-0.0150 ± 0.0107 ± 0.0082
	0.082 – 0.105	2.33	0.093	0.487	0.366	0.354	0.779	-0.0094 ± 0.0066 ± 0.0058	-0.0150 ± 0.0107 ± 0.0082
	0.105 – 0.134	2.86	0.118	0.468	0.369	0.348	0.797	-0.0210 ± 0.0067 ± 0.0083	-0.0330 ± 0.0110 ± 0.0128
	0.134 – 0.186	3.66	0.156	0.454	0.369	0.342	0.813	-0.0184 ± 0.0066 ± 0.0085	-0.0304 ± 0.0109 ± 0.0133
	0.186 – 0.600	5.66	0.253	0.434	0.364	0.349	0.835	-0.0284 ± 0.0072 ± 0.0095	-0.0523 ± 0.0119 ± 0.0156
z	0.200 – 0.260	2.39	0.084	0.598	0.229	0.350	0.656	-0.0183 ± 0.0048 ± 0.0033	-0.0250 ± 0.0071 ± 0.0039
	0.260 – 0.320	2.38	0.091	0.559	0.289	0.379	0.698	-0.0106 ± 0.0053 ± 0.0050	-0.0161 ± 0.0082 ± 0.0064
	0.320 – 0.380	2.36	0.094	0.536	0.348	0.403	0.721	-0.0071 ± 0.0061 ± 0.0068	-0.0080 ± 0.0097 ± 0.0097
	0.380 – 0.450	2.37	0.097	0.521	0.413	0.422	0.738	-0.0271 ± 0.0067 ± 0.0090	-0.0472 ± 0.0108 ± 0.0138
	0.450 – 0.520	2.35	0.098	0.509	0.483	0.437	0.751	-0.0244 ± 0.0080 ± 0.0103	-0.0375 ± 0.0132 ± 0.0170
	0.450 – 0.520	2.35	0.098	0.509	0.483	0.437	0.751	-0.0244 ± 0.0080 ± 0.0103	-0.0375 ± 0.0132 ± 0.0170
	0.520 – 0.600	2.31	0.098	0.498	0.558	0.449	0.764	-0.0256 ± 0.0090 ± 0.0116	-0.0418 ± 0.0151 ± 0.0200
	0.600 – 0.700	2.27	0.099	0.479	0.646	0.438	0.787	-0.0396 ± 0.0100 ± 0.0137	-0.0671 ± 0.0171 ± 0.0243
	0.700 – 0.760	2.19	0.099	0.452	0.729	0.416	0.818	-0.0371 ± 0.0154 ± 0.0102	-0.0669 ± 0.0270 ± 0.0177
	0.760 – 0.840	2.15	0.101	0.432	0.798	0.389	0.839	-0.0398 ± 0.0151 ± 0.0148	-0.0671 ± 0.0266 ± 0.0260
	0.840 – 1.200	2.08	0.104	0.399	0.906	0.338	0.868	-0.0643 ± 0.0144 ± 0.0094	-0.1146 ± 0.0258 ± 0.0146
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.48	0.107	0.462	0.337	0.110	0.811	-0.0207 ± 0.0059 ± 0.0071	-0.0355 ± 0.0102 ± 0.0119
	0.170 – 0.250	2.47	0.103	0.492	0.345	0.211	0.775	-0.0027 ± 0.0065 ± 0.0085	-0.0056 ± 0.0111 ± 0.0153
	0.250 – 0.310	2.43	0.098	0.520	0.350	0.280	0.743	-0.0150 ± 0.0075 ± 0.0105	-0.0220 ± 0.0126 ± 0.0185
	0.310 – 0.380	2.36	0.092	0.546	0.349	0.345	0.714	-0.0376 ± 0.0070 ± 0.0105	-0.0573 ± 0.0112 ± 0.0161
	0.310 – 0.380	2.36	0.092	0.546	0.349	0.345	0.714	-0.0376 ± 0.0070 ± 0.0105	-0.0573 ± 0.0112 ± 0.0161
	0.380 – 0.520	2.30	0.086	0.576	0.347	0.446	0.678	-0.0140 ± 0.0054 ± 0.0111	-0.0222 ± 0.0082 ± 0.0158
	0.520 – 0.690	2.28	0.081	0.606	0.359	0.594	0.640	-0.0186 ± 0.0066 ± 0.0117	-0.0273 ± 0.0095 ± 0.0159
	0.690 – 2.000	2.26	0.076	0.643	0.409	0.846	0.594	-0.0168 ± 0.0086 ± 0.0172	-0.0197 ± 0.0117 ± 0.0223

Table 64. One-dimensionally binned SFA and CSA amplitudes of the $\sin(\phi_S)$ modulation for π^- as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin		Average kinematics						K^+	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(\phi_S)/\sqrt{2\epsilon(1+\epsilon)} \rangle_{U\perp}$	$2\langle \sin(\phi_S) \rangle_{U\perp}$
x	0.023 – 0.046	1.29	0.036	0.704	0.363	0.527	0.524	0.0032 ± 0.0192 ± 0.0089	-0.0094 ± 0.0248 ± 0.0126
	0.046 – 0.067	1.65	0.056	0.571	0.384	0.436	0.696	-0.0213 ± 0.0147 ± 0.0038	-0.0297 ± 0.0223 ± 0.0068
	0.067 – 0.082	2.01	0.074	0.524	0.392	0.398	0.743	0.0037 ± 0.0173 ± 0.0062	0.0018 ± 0.0277 ± 0.0104
	0.082 – 0.105	2.39	0.093	0.498	0.401	0.378	0.769	0.0065 ± 0.0148 ± 0.0042	0.0061 ± 0.0242 ± 0.0061
	0.082 – 0.105	2.39	0.093	0.498	0.401	0.378	0.769	0.0065 ± 0.0148 ± 0.0042	0.0061 ± 0.0242 ± 0.0061
	0.105 – 0.134	2.93	0.118	0.479	0.404	0.366	0.788	0.0065 ± 0.0145 ± 0.0034	0.0100 ± 0.0241 ± 0.0059
	0.134 – 0.186	3.79	0.157	0.468	0.408	0.358	0.801	0.0116 ± 0.0134 ± 0.0041	0.0220 ± 0.0222 ± 0.0083
	0.186 – 0.600	5.86	0.252	0.451	0.410	0.357	0.822	-0.0113 ± 0.0130 ± 0.0126	-0.0168 ± 0.0216 ± 0.0243
z	0.200 – 0.260	2.46	0.085	0.603	0.228	0.351	0.652	-0.0243 ± 0.0134 ± 0.0089	-0.0341 ± 0.0196 ± 0.0143
	0.260 – 0.320	2.49	0.092	0.569	0.287	0.378	0.688	-0.0062 ± 0.0129 ± 0.0054	-0.0150 ± 0.0198 ± 0.0101
	0.320 – 0.380	2.53	0.097	0.548	0.347	0.403	0.711	-0.0048 ± 0.0131 ± 0.0081	-0.0047 ± 0.0207 ± 0.0138
	0.380 – 0.450	2.56	0.101	0.532	0.412	0.425	0.730	-0.0068 ± 0.0131 ± 0.0088	-0.0174 ± 0.0216 ± 0.0147
	0.450 – 0.520	2.55	0.102	0.522	0.482	0.458	0.739	0.0301 ± 0.0149 ± 0.0107	0.0421 ± 0.0247 ± 0.0192
	0.450 – 0.520	2.55	0.102	0.522	0.482	0.458	0.739	0.0301 ± 0.0149 ± 0.0107	0.0421 ± 0.0247 ± 0.0192
	0.520 – 0.600	2.54	0.104	0.515	0.556	0.484	0.748	-0.0039 ± 0.0158 ± 0.0086	-0.0040 ± 0.0265 ± 0.0155
	0.600 – 0.700	2.61	0.108	0.500	0.645	0.506	0.766	0.0361 ± 0.0168 ± 0.0126	0.0653 ± 0.0283 ± 0.0227
	0.700 – 0.760	2.63	0.112	0.474	0.727	0.506	0.797	0.0603 ± 0.0255 ± 0.0096	0.1024 ± 0.0441 ± 0.0180
	0.760 – 0.840	2.62	0.116	0.448	0.796	0.501	0.825	0.1059 ± 0.0253 ± 0.0065	0.1851 ± 0.0442 ± 0.0121
	0.840 – 1.200	2.47	0.119	0.411	0.903	0.469	0.858	0.1882 ± 0.0265 ± 0.0060	0.3310 ± 0.0471 ± 0.0119
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.68	0.113	0.468	0.362	0.111	0.807	0.0078 ± 0.0128 ± 0.0103	0.0122 ± 0.0221 ± 0.0175
	0.170 – 0.250	2.66	0.109	0.495	0.372	0.211	0.775	0.0220 ± 0.0144 ± 0.0128	0.0376 ± 0.0247 ± 0.0242
	0.250 – 0.310	2.66	0.106	0.517	0.377	0.280	0.750	0.0014 ± 0.0169 ± 0.0122	0.0027 ± 0.0287 ± 0.0228
	0.310 – 0.380	2.56	0.099	0.540	0.381	0.345	0.723	-0.0085 ± 0.0159 ± 0.0115	-0.0122 ± 0.0262 ± 0.0197
	0.310 – 0.380	2.56	0.099	0.540	0.381	0.345	0.723	-0.0085 ± 0.0159 ± 0.0115	-0.0122 ± 0.0262 ± 0.0197
	0.380 – 0.520	2.49	0.093	0.565	0.387	0.447	0.692	-0.0037 ± 0.0121 ± 0.0050	-0.0096 ± 0.0189 ± 0.0090
	0.520 – 0.690	2.41	0.087	0.593	0.402	0.597	0.658	-0.0172 ± 0.0138 ± 0.0010	-0.0262 ± 0.0206 ± 0.0055
	0.690 – 2.000	2.29	0.076	0.642	0.451	0.867	0.597	0.0031 ± 0.0157 ± 0.0036	0.0035 ± 0.0218 ± 0.0056

Table 65. One-dimensionally binned SFA and CSA amplitudes of the $\sin(\phi_S)$ modulation for K^+ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin		Average kinematics						K^-	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(\phi_S)/\sqrt{2\epsilon(1+\epsilon)} \rangle_{U\perp}$	$2\langle \sin(\phi_S) \rangle_{U\perp}$
x	0.023 – 0.046	1.30	0.036	0.711	0.338	0.503	0.513	-0.0260 ± 0.0249 ± 0.0025	-0.0465 ± 0.0313 ± 0.0045
	0.046 – 0.067	1.67	0.056	0.578	0.355	0.417	0.687	-0.0140 ± 0.0209 ± 0.0067	-0.0109 ± 0.0312 ± 0.0085
	0.067 – 0.082	2.04	0.074	0.533	0.361	0.381	0.734	-0.0053 ± 0.0254 ± 0.0022	-0.0004 ± 0.0399 ± 0.0041
	0.082 – 0.105	2.44	0.093	0.510	0.367	0.367	0.758	-0.0505 ± 0.0222 ± 0.0040	-0.0827 ± 0.0353 ± 0.0030
	0.082 – 0.105	2.44	0.093	0.510	0.367	0.367	0.758	-0.0505 ± 0.0222 ± 0.0040	-0.0827 ± 0.0353 ± 0.0030
	0.105 – 0.134	3.01	0.118	0.493	0.366	0.362	0.775	0.0071 ± 0.0238 ± 0.0089	0.0159 ± 0.0385 ± 0.0101
	0.134 – 0.186	3.89	0.157	0.480	0.365	0.356	0.790	-0.0398 ± 0.0222 ± 0.0133	-0.0590 ± 0.0361 ± 0.0170
	0.186 – 0.600	5.82	0.251	0.451	0.363	0.364	0.821	-0.0579 ± 0.0244 ± 0.0326	-0.0911 ± 0.0398 ± 0.0502
z	0.200 – 0.260	2.41	0.082	0.616	0.227	0.362	0.636	-0.0090 ± 0.0174 ± 0.0003	-0.0139 ± 0.0250 ± 0.0011
	0.260 – 0.320	2.41	0.087	0.582	0.287	0.389	0.673	-0.0268 ± 0.0180 ± 0.0028	-0.0449 ± 0.0271 ± 0.0033
	0.320 – 0.380	2.40	0.091	0.557	0.347	0.419	0.701	-0.0786 ± 0.0199 ± 0.0119	-0.1147 ± 0.0309 ± 0.0146
	0.380 – 0.450	2.37	0.092	0.542	0.411	0.440	0.718	-0.0145 ± 0.0215 ± 0.0188	-0.0133 ± 0.0347 ± 0.0244
	0.450 – 0.520	2.29	0.091	0.534	0.482	0.460	0.726	0.0123 ± 0.0252 ± 0.0224	0.0270 ± 0.0412 ± 0.0319
	0.450 – 0.520	2.29	0.091	0.534	0.482	0.460	0.726	0.0123 ± 0.0252 ± 0.0224	0.0270 ± 0.0412 ± 0.0319
	0.520 – 0.600	2.34	0.093	0.531	0.556	0.465	0.729	0.0058 ± 0.0298 ± 0.0301	0.0112 ± 0.0490 ± 0.0469
	0.600 – 0.700	2.33	0.094	0.520	0.642	0.493	0.744	-0.0736 ± 0.0371 ± 0.0339	-0.1135 ± 0.0625 ± 0.0562
	0.700 – 0.760	2.28	0.093	0.506	0.726	0.500	0.766	-0.0950 ± 0.0664 ± 0.0370	-0.1725 ± 0.1110 ± 0.0653
	0.760 – 0.840	2.30	0.096	0.482	0.793	0.464	0.795	-0.0793 ± 0.0901 ± 0.0300	-0.1364 ± 0.1576 ± 0.0533
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.47	0.103	0.477	0.337	0.111	0.797	-0.0380 ± 0.0207 ± 0.0055	-0.0622 ± 0.0356 ± 0.0089
	0.170 – 0.250	2.48	0.100	0.513	0.346	0.210	0.756	-0.0454 ± 0.0230 ± 0.0051	-0.0812 ± 0.0393 ± 0.0087
	0.250 – 0.310	2.48	0.096	0.540	0.346	0.280	0.724	-0.0059 ± 0.0270 ± 0.0020	-0.0094 ± 0.0454 ± 0.0018
	0.310 – 0.380	2.39	0.089	0.566	0.351	0.345	0.692	-0.0109 ± 0.0251 ± 0.0045	-0.0155 ± 0.0398 ± 0.0056
	0.310 – 0.380	2.39	0.089	0.566	0.351	0.345	0.692	-0.0109 ± 0.0251 ± 0.0045	-0.0155 ± 0.0398 ± 0.0056
	0.380 – 0.520	2.32	0.084	0.592	0.348	0.447	0.661	-0.0134 ± 0.0187 ± 0.0076	-0.0157 ± 0.0281 ± 0.0084
	0.520 – 0.690	2.31	0.080	0.620	0.358	0.597	0.625	-0.0403 ± 0.0213 ± 0.0097	-0.0650 ± 0.0303 ± 0.0118
	0.690 – 2.000	2.26	0.073	0.661	0.409	0.856	0.572	-0.0225 ± 0.0249 ± 0.0108	-0.0305 ± 0.0330 ± 0.0134

Table 66. One-dimensionally binned SFA and CSA amplitudes of the $\sin(\phi_S)$ modulation for K^- as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin		Average kinematics						p	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(\phi_S)/\sqrt{2\epsilon(1+\epsilon)} \rangle_{U\perp}$	$2\langle \sin(\phi_S) \rangle_{U\perp}$
x	0.023 – 0.040	1.24	0.033	0.738	0.354	0.550	0.475	0.0029 ± 0.0259 ± 0.0019	0.0131 ± 0.0325 ± 0.0020
	0.040 – 0.057	1.54	0.048	0.619	0.395	0.490	0.640	0.0096 ± 0.0194 ± 0.0065	0.0059 ± 0.0280 ± 0.0092
	0.057 – 0.075	1.90	0.066	0.561	0.424	0.447	0.706	-0.0129 ± 0.0186 ± 0.0027	-0.0269 ± 0.0286 ± 0.0043
	0.075 – 0.098	2.36	0.086	0.533	0.439	0.430	0.735	-0.0099 ± 0.0173 ± 0.0007	-0.0068 ± 0.0277 ± 0.0020
	0.075 – 0.098	2.36	0.086	0.533	0.439	0.430	0.735	-0.0099 ± 0.0173 ± 0.0007	-0.0068 ± 0.0277 ± 0.0020
	0.098 – 0.136	3.06	0.115	0.514	0.449	0.406	0.757	-0.0122 ± 0.0149 ± 0.0013	-0.0204 ± 0.0243 ± 0.0025
	0.136 – 0.185	4.04	0.158	0.496	0.457	0.390	0.777	-0.0069 ± 0.0162 ± 0.0004	-0.0161 ± 0.0267 ± 0.0020
	0.185 – 0.600	6.13	0.257	0.464	0.471	0.383	0.811	-0.0075 ± 0.0142 ± 0.0032	-0.0131 ± 0.0237 ± 0.0030
z	0.200 – 0.270	2.30	0.062	0.739	0.239	0.477	0.477	-0.0156 ± 0.0220 ± 0.0073	-0.0248 ± 0.0277 ± 0.0079
	0.270 – 0.340	2.57	0.081	0.643	0.306	0.456	0.613	0.0017 ± 0.0155 ± 0.0051	0.0163 ± 0.0228 ± 0.0069
	0.340 – 0.410	2.64	0.093	0.583	0.375	0.443	0.683	-0.0096 ± 0.0138 ± 0.0062	-0.0230 ± 0.0221 ± 0.0110
	0.410 – 0.470	2.66	0.102	0.544	0.439	0.446	0.723	-0.0158 ± 0.0151 ± 0.0019	-0.0283 ± 0.0250 ± 0.0007
	0.470 – 0.530	2.68	0.109	0.512	0.499	0.435	0.757	-0.0181 ± 0.0161 ± 0.0125	-0.0257 ± 0.0271 ± 0.0190
	0.470 – 0.530	2.68	0.109	0.512	0.499	0.435	0.757	-0.0181 ± 0.0161 ± 0.0125	-0.0257 ± 0.0271 ± 0.0190
	0.530 – 0.610	2.64	0.113	0.485	0.567	0.452	0.781	0.0116 ± 0.0166 ± 0.0168	0.0189 ± 0.0279 ± 0.0272
	0.610 – 0.700	2.63	0.119	0.455	0.650	0.463	0.810	0.0020 ± 0.0202 ± 0.0191	-0.0055 ± 0.0343 ± 0.0328
	0.700 – 0.780	2.57	0.123	0.423	0.735	0.477	0.841	-0.0163 ± 0.0303 ± 0.0185	-0.0256 ± 0.0526 ± 0.0314
	0.780 – 0.880	2.54	0.130	0.389	0.821	0.490	0.872	-0.0220 ± 0.0427 ± 0.0158	-0.0466 ± 0.0755 ± 0.0266
	0.880 – 1.200	2.45	0.136	0.353	0.938	0.505	0.900	0.1510 ± 0.0716 ± 0.0138	0.2837 ± 0.1284 ± 0.0260
$P_{h\perp}$ [GeV]	0.000 – 0.230	2.88	0.113	0.510	0.435	0.150	0.765	0.0159 ± 0.0130 ± 0.0122	0.0244 ± 0.0221 ± 0.0227
	0.230 – 0.340	2.76	0.106	0.543	0.427	0.286	0.723	-0.0317 ± 0.0144 ± 0.0076	-0.0642 ± 0.0245 ± 0.0155
	0.340 – 0.430	2.62	0.097	0.569	0.416	0.385	0.691	-0.0434 ± 0.0168 ± 0.0093	-0.0623 ± 0.0275 ± 0.0150
	0.430 – 0.520	2.54	0.091	0.590	0.413	0.474	0.666	-0.0023 ± 0.0179 ± 0.0080	-0.0049 ± 0.0279 ± 0.0125
	0.430 – 0.520	2.54	0.091	0.590	0.413	0.474	0.666	-0.0023 ± 0.0179 ± 0.0080	-0.0049 ± 0.0279 ± 0.0125
	0.520 – 0.620	2.44	0.085	0.608	0.406	0.568	0.644	0.0051 ± 0.0184 ± 0.0037	0.0121 ± 0.0278 ± 0.0067
	0.620 – 0.740	2.35	0.080	0.620	0.405	0.676	0.628	0.0171 ± 0.0208 ± 0.0010	0.0148 ± 0.0303 ± 0.0011
	0.740 – 2.000	2.31	0.078	0.633	0.432	0.904	0.609	0.0041 ± 0.0201 ± 0.0013	0.0013 ± 0.0276 ± 0.0022

Table 67. One-dimensionally binned SFA and CSA amplitudes of the $\sin(\phi_S)$ modulation for p as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin		Average kinematics						$\bar{p}$	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(\phi_S)/\sqrt{2\epsilon(1+\epsilon)} \rangle_{U\perp}$	$2\langle \sin(\phi_S) \rangle_{U\perp}$
x	0.023 – 0.040	1.26	0.032	0.759	0.335	0.539	0.442	-0.0567 ± 0.0524 ± 0.0046	-0.0583 ± 0.0603 ± 0.0076
	0.040 – 0.057	1.65	0.048	0.666	0.360	0.492	0.579	0.0292 ± 0.0484 ± 0.0186	0.0178 ± 0.0636 ± 0.0245
	0.057 – 0.075	2.12	0.065	0.628	0.372	0.472	0.626	-0.0759 ± 0.0474 ± 0.0034	-0.1248 ± 0.0644 ± 0.0012
	0.075 – 0.098	2.69	0.085	0.608	0.377	0.450	0.655	0.0699 ± 0.0500 ± 0.0094	0.0879 ± 0.0729 ± 0.0059
	0.075 – 0.098	2.69	0.085	0.608	0.377	0.450	0.655	0.0699 ± 0.0500 ± 0.0094	0.0879 ± 0.0729 ± 0.0059
	0.098 – 0.136	3.48	0.115	0.588	0.385	0.429	0.678	0.0138 ± 0.0489 ± 0.0046	0.0036 ± 0.0728 ± 0.0043
	0.136 – 0.185	4.58	0.158	0.562	0.385	0.399	0.712	-0.0208 ± 0.0569 ± 0.0008	-0.0229 ± 0.0883 ± 0.0022
	0.185 – 0.600	6.60	0.243	0.531	0.406	0.383	0.748	0.0127 ± 0.0516 ± 0.0114	0.0216 ± 0.0827 ± 0.0239
z	0.200 – 0.270	2.25	0.060	0.750	0.238	0.471	0.459	0.0290 ± 0.0439 ± 0.0160	0.0300 ± 0.0520 ± 0.0168
	0.270 – 0.340	2.48	0.074	0.679	0.304	0.476	0.562	0.0217 ± 0.0361 ± 0.0150	0.0150 ± 0.0487 ± 0.0161
	0.340 – 0.410	2.43	0.079	0.634	0.373	0.482	0.618	-0.0404 ± 0.0396 ± 0.0181	-0.0545 ± 0.0582 ± 0.0141
	0.410 – 0.470	2.43	0.085	0.595	0.437	0.470	0.665	0.0118 ± 0.0528 ± 0.0126	-0.0476 ± 0.0829 ± 0.0087
	0.470 – 0.530	2.41	0.085	0.583	0.498	0.478	0.678	-0.0112 ± 0.0625 ± 0.0158	-0.0563 ± 0.0974 ± 0.0156
	0.470 – 0.530	2.41	0.085	0.583	0.498	0.478	0.678	-0.0112 ± 0.0625 ± 0.0158	-0.0563 ± 0.0974 ± 0.0156
	0.530 – 0.610	2.26	0.083	0.567	0.563	0.492	0.698	-0.0048 ± 0.0747 ± 0.0234	-0.0167 ± 0.1234 ± 0.0274
	0.610 – 0.700	2.40	0.095	0.527	0.645	0.502	0.745	-0.0292 ± 0.0966 ± 0.0103	-0.0420 ± 0.1625 ± 0.0112
$P_{h\perp}$ [GeV]	0.000 – 0.230	2.79	0.097	0.586	0.378	0.151	0.683	-0.0094 ± 0.0448 ± 0.0033	-0.0115 ± 0.0732 ± 0.0023
	0.230 – 0.340	2.53	0.083	0.630	0.364	0.288	0.622	0.0123 ± 0.0512 ± 0.0179	-0.0081 ± 0.0855 ± 0.0125
	0.340 – 0.430	2.37	0.075	0.652	0.358	0.385	0.592	0.0308 ± 0.0572 ± 0.0047	0.0013 ± 0.0813 ± 0.0107
	0.430 – 0.520	2.35	0.073	0.667	0.351	0.475	0.572	-0.0987 ± 0.0512 ± 0.0091	-0.1471 ± 0.0711 ± 0.0054
	0.430 – 0.520	2.35	0.073	0.667	0.351	0.475	0.572	-0.0987 ± 0.0512 ± 0.0091	-0.1471 ± 0.0711 ± 0.0054
	0.520 – 0.620	2.30	0.070	0.678	0.355	0.569	0.557	-0.0376 ± 0.0515 ± 0.0013	-0.0607 ± 0.0698 ± 0.0017
	0.620 – 0.740	2.21	0.066	0.687	0.355	0.675	0.544	0.0958 ± 0.0520 ± 0.0031	0.1011 ± 0.0668 ± 0.0025
	0.740 – 2.000	2.12	0.062	0.698	0.386	0.886	0.527	-0.0685 ± 0.0554 ± 0.0024	-0.0692 ± 0.0678 ± 0.0033

Table 68. One-dimensionally binned SFA and CSA amplitudes of the $\sin(\phi_S)$ modulation for $\bar{p}$ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin			Average kinematics						π^+	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(\phi_S)/\sqrt{2\epsilon(1+\epsilon)} \rangle_{U\perp}$	$2\langle \sin(\phi_S) \rangle_{U\perp}$
0.023 – 0.072	0.20 – 0.28	0.00 – 0.23	1.46	0.052	0.561	0.236	0.151	0.708	0.0008 ± 0.0198 ± 0.0061	0.0008 ± 0.0198 ± 0.0061
		0.23 – 0.36	1.51	0.048	0.632	0.235	0.298	0.619	0.0049 ± 0.0142 ± 0.0022	0.0049 ± 0.0142 ± 0.0022
		0.36 – 0.54	1.54	0.046	0.673	0.237	0.443	0.564	-0.0072 ± 0.0105 ± 0.0002	-0.0072 ± 0.0105 ± 0.0002
		0.54 – 2.00	1.59	0.043	0.730	0.242	0.655	0.483	-0.0041 ± 0.0153 ± 0.0035	-0.0041 ± 0.0153 ± 0.0035
	0.28 – 0.37	0.00 – 0.23	1.43	0.054	0.525	0.320	0.150	0.750	-0.0097 ± 0.0223 ± 0.0018	-0.0097 ± 0.0223 ± 0.0018
		0.23 – 0.36	1.48	0.050	0.595	0.320	0.297	0.665	0.0147 ± 0.0304 ± 0.0085	0.0147 ± 0.0304 ± 0.0085
		0.36 – 0.54	1.52	0.047	0.640	0.320	0.449	0.607	0.0247 ± 0.0147 ± 0.0009	0.0247 ± 0.0147 ± 0.0009
		0.54 – 2.00	1.56	0.045	0.692	0.323	0.699	0.536	0.0008 ± 0.0135 ± 0.0005	0.0008 ± 0.0135 ± 0.0005
	0.37 – 0.49	0.00 – 0.23	1.40	0.055	0.504	0.422	0.151	0.775	0.0198 ± 0.0253 ± 0.0014	0.0198 ± 0.0253 ± 0.0014
		0.23 – 0.36	1.45	0.051	0.563	0.422	0.298	0.705	-0.0132 ± 0.0387 ± 0.0029	-0.0132 ± 0.0387 ± 0.0029
		0.36 – 0.54	1.49	0.049	0.609	0.423	0.447	0.648	0.0070 ± 0.0264 ± 0.0024	0.0070 ± 0.0264 ± 0.0024
		0.54 – 2.00	1.54	0.046	0.668	0.425	0.747	0.569	0.0004 ± 0.0143 ± 0.0012	0.0004 ± 0.0143 ± 0.0012
	0.49 – 0.70	0.00 – 0.23	1.38	0.056	0.488	0.579	0.151	0.793	0.0079 ± 0.0278 ± 0.0018	0.0079 ± 0.0278 ± 0.0018
		0.23 – 0.36	1.41	0.053	0.529	0.578	0.298	0.745	0.0227 ± 0.0384 ± 0.0048	0.0227 ± 0.0384 ± 0.0048
		0.36 – 0.54	1.45	0.051	0.571	0.577	0.448	0.695	-0.0241 ± 0.0384 ± 0.0007	-0.0241 ± 0.0384 ± 0.0007
		0.54 – 2.00	1.51	0.048	0.633	0.577	0.786	0.618	0.0339 ± 0.0179 ± 0.0009	0.0339 ± 0.0179 ± 0.0009
0.072 – 0.098	0.20 – 0.28	0.00 – 0.23	2.10	0.084	0.484	0.239	0.140	0.792	0.0054 ± 0.0174 ± 0.0011	0.0054 ± 0.0174 ± 0.0011
		0.23 – 0.36	2.39	0.084	0.550	0.238	0.295	0.721	-0.0023 ± 0.0194 ± 0.0021	-0.0023 ± 0.0194 ± 0.0021
		0.36 – 0.54	2.47	0.084	0.572	0.239	0.441	0.692	0.0038 ± 0.0177 ± 0.0014	0.0038 ± 0.0177 ± 0.0014
		0.54 – 2.00	2.73	0.084	0.633	0.244	0.643	0.620	-0.0032 ± 0.0310 ± 0.0011	-0.0032 ± 0.0310 ± 0.0011
	0.28 – 0.37	0.00 – 0.23	1.89	0.084	0.434	0.321	0.142	0.834	0.0038 ± 0.0183 ± 0.0013	0.0038 ± 0.0183 ± 0.0013
		0.23 – 0.36	2.14	0.084	0.492	0.322	0.293	0.778	-0.0546 ± 0.0276 ± 0.0017	-0.0546 ± 0.0276 ± 0.0017
		0.36 – 0.54	2.30	0.084	0.530	0.321	0.444	0.736	0.0202 ± 0.0202 ± 0.0025	0.0202 ± 0.0202 ± 0.0025
		0.54 – 2.00	2.51	0.084	0.581	0.325	0.676	0.678	-0.0087 ± 0.0235 ± 0.0019	-0.0087 ± 0.0235 ± 0.0019
	0.37 – 0.49	0.00 – 0.23	1.83	0.085	0.420	0.423	0.146	0.846	0.0012 ± 0.0206 ± 0.0010	0.0012 ± 0.0206 ± 0.0010
		0.23 – 0.36	1.99	0.085	0.455	0.424	0.293	0.812	0.0049 ± 0.0273 ± 0.0007	0.0049 ± 0.0273 ± 0.0007
		0.36 – 0.54	2.18	0.084	0.502	0.425	0.443	0.766	0.0092 ± 0.0285 ± 0.0026	0.0092 ± 0.0285 ± 0.0026
		0.54 – 2.00	2.38	0.084	0.551	0.427	0.719	0.711	0.0461 ± 0.0223 ± 0.0006	0.0461 ± 0.0223 ± 0.0006
	0.49 – 0.70	0.00 – 0.23	1.78	0.085	0.407	0.578	0.148	0.857	-0.0212 ± 0.0241 ± 0.0012	-0.0212 ± 0.0241 ± 0.0012
		0.23 – 0.36	1.87	0.085	0.427	0.580	0.295	0.838	0.0048 ± 0.0263 ± 0.0048	0.0048 ± 0.0263 ± 0.0048
		0.36 – 0.54	2.02	0.084	0.463	0.583	0.443	0.806	0.0039 ± 0.0309 ± 0.0046	0.0039 ± 0.0309 ± 0.0046
		0.54 – 2.00	2.29	0.084	0.530	0.583	0.754	0.736	0.0021 ± 0.0234 ± 0.0001	0.0021 ± 0.0234 ± 0.0001
0.098 – 0.138	0.20 – 0.28	0.00 – 0.23	2.86	0.116	0.477	0.239	0.139	0.799	0.0048 ± 0.0147 ± 0.0027	0.0048 ± 0.0147 ± 0.0027
		0.23 – 0.36	3.18	0.116	0.532	0.239	0.292	0.742	-0.0013 ± 0.0188 ± 0.0014	-0.0013 ± 0.0188 ± 0.0014
		0.36 – 0.54	3.26	0.115	0.547	0.239	0.441	0.721	-0.0392 ± 0.0193 ± 0.0011	-0.0392 ± 0.0193 ± 0.0011
		0.54 – 2.00	3.53	0.115	0.593	0.244	0.638	0.670	0.0080 ± 0.0353 ± 0.0003	0.0080 ± 0.0353 ± 0.0003
	0.28 – 0.37	0.00 – 0.23	2.53	0.116	0.422	0.322	0.143	0.843	0.0145 ± 0.0152 ± 0.0052	0.0145 ± 0.0152 ± 0.0052
		0.23 – 0.36	2.81	0.116	0.469	0.323	0.291	0.799	-0.0021 ± 0.0214 ± 0.0037	-0.0021 ± 0.0214 ± 0.0037
		0.36 – 0.54	3.03	0.116	0.508	0.322	0.442	0.759	-0.0454 ± 0.0198 ± 0.0004	-0.0454 ± 0.0198 ± 0.0004
		0.54 – 2.00	3.21	0.115	0.539	0.325	0.672	0.725	0.0026 ± 0.0258 ± 0.0006	0.0026 ± 0.0258 ± 0.0006
	0.37 – 0.49	0.00 – 0.23	2.41	0.116	0.402	0.423	0.148	0.857	0.0221 ± 0.0176 ± 0.0015	0.0221 ± 0.0176 ± 0.0015
		0.23 – 0.36	2.51	0.116	0.418	0.426	0.293	0.841	-0.0073 ± 0.0199 ± 0.0055	-0.0073 ± 0.0199 ± 0.0055
		0.36 – 0.54	2.84	0.116	0.475	0.427	0.441	0.791	0.0000 ± 0.0232 ± 0.0011	0.0000 ± 0.0232 ± 0.0011
		0.54 – 2.00	3.11	0.116	0.521	0.427	0.716	0.741	-0.0504 ± 0.0226 ± 0.0017	-0.0504 ± 0.0226 ± 0.0017
	0.49 – 0.70	0.00 – 0.23	2.38	0.116	0.398	0.577	0.151	0.862	0.0293 ± 0.0207 ± 0.0034	0.0293 ± 0.0207 ± 0.0034
		0.23 – 0.36	2.40	0.116	0.400	0.579	0.296	0.858	-0.0324 ± 0.0207 ± 0.0013	-0.0324 ± 0.0207 ± 0.0013
		0.36 – 0.54	2.55	0.116	0.426	0.582	0.441	0.835	-0.0012 ± 0.0215 ± 0.0013	-0.0012 ± 0.0215 ± 0.0013
		0.54 – 2.00	2.98	0.115	0.500	0.584	0.742	0.765	-0.0156 ± 0.0217 ± 0.0040	-0.0156 ± 0.0217 ± 0.0040
0.138 – 0.600	0.20 – 0.28	0.00 – 0.23	4.95	0.205	0.467	0.239	0.141	0.811	0.0257 ± 0.0110 ± 0.0021	0.0257 ± 0.0110 ± 0.0021
		0.23 – 0.36	5.26	0.214	0.486	0.241	0.290	0.790	-0.0019 ± 0.0153 ± 0.0017	-0.0019 ± 0.0153 ± 0.0017
		0.36 – 0.54	5.21	0.207	0.497	0.240	0.440	0.776	-0.0132 ± 0.0203 ± 0.0027	-0.0132 ± 0.0203 ± 0.0027
		0.54 – 2.00	5.42	0.209	0.515	0.244	0.637	0.759	-0.0909 ± 0.0526 ± 0.0084	-0.0909 ± 0.0526 ± 0.0084
	0.28 – 0.37	0.00 – 0.23	4.48	0.201	0.428	0.321	0.147	0.841	0.0155 ± 0.0118 ± 0.0023	0.0155 ± 0.0118 ± 0.0023
		0.23 – 0.36	4.64	0.210	0.430	0.323	0.292	0.835	-0.0194 ± 0.0150 ± 0.0029	-0.0194 ± 0.0150 ± 0.0029
		0.36 – 0.54	4.89	0.211	0.457	0.324	0.439	0.810	-0.0023 ± 0.0174 ± 0.0005	-0.0023 ± 0.0174 ± 0.0005
		0.54 – 2.00	4.93	0.205	0.474	0.325	0.671	0.793	0.0284 ± 0.0292 ± 0.0044	0.0284 ± 0.0292 ± 0.0044
	0.37 – 0.49	0.00 – 0.23	4.38	0.201	0.419	0.422	0.150	0.847	0.0385 ± 0.0135 ± 0.0044	0.0385 ± 0.0135 ± 0.0044
		0.23 – 0.36	4.38	0.205	0.413	0.424	0.294	0.850	-0.0008 ± 0.0153 ± 0.0001	-0.0008 ± 0.0153 ± 0.0001
		0.36 – 0.54	4.65	0.210	0.432	0.427	0.438	0.832	-0.0031 ± 0.0170 ± 0.0016	-0.0031 ± 0.0170 ± 0.0016
		0.54 – 2.00	4.84	0.205	0.466	0.427	0.704	0.799	0.0341 ± 0.0217 ± 0.0011	0.0341 ± 0.0217 ± 0.0011
	0.49 – 0.70	0.00 – 0.23	4.33	0.200	0.414	0.575	0.153	0.852	0.0171 ± 0.0159 ± 0.0057	0.0171 ± 0.0159 ± 0.0057
		0.23 – 0.36	4.28	0.200	0.410	0.577	0.296	0.852	0.0148 ± 0.0166 ± 0.0021	0.0148 ± 0.0166 ± 0.0021
		0.36 – 0.54	4.41	0.206	0.413	0.580	0.444	0.848	0.0324 ± 0.0161 ± 0.0035	0.0324 ± 0.0161 ± 0.0035
		0.54 – 2.00	4.82	0.209	0.454	0.587	0.723	0.811	0.0013 ± 0.0179 ± 0.0016	0.0013 ± 0.0179 ± 0.0016

Table 69. Three-dimensionally binned SFA and CSA amplitudes of the $\sin(\phi_S)$ modulation for π^+ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin			Average kinematics						π^-	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(\phi_S)/\sqrt{2\epsilon(1+\epsilon)} \rangle_{U\perp}$	$2\langle \sin(\phi_S) \rangle_{U\perp}$
0.023 – 0.072	0.20 – 0.28	0.00 – 0.23	1.46	0.052	0.561	0.236	0.152	0.709	-0.0103 ± 0.0228 ± 0.0001	-0.0103 ± 0.0228 ± 0.0001
		0.23 – 0.36	1.51	0.047	0.636	0.234	0.298	0.613	-0.0086 ± 0.0156 ± 0.0052	-0.0086 ± 0.0156 ± 0.0052
		0.36 – 0.54	1.53	0.045	0.674	0.236	0.443	0.561	-0.0171 ± 0.0118 ± 0.0033	-0.0171 ± 0.0118 ± 0.0033
		0.54 – 2.00	1.58	0.043	0.729	0.241	0.658	0.483	0.0028 ± 0.0169 ± 0.0033	0.0028 ± 0.0169 ± 0.0033
	0.28 – 0.37	0.00 – 0.23	1.43	0.054	0.527	0.320	0.150	0.748	-0.0051 ± 0.0257 ± 0.0004	-0.0051 ± 0.0257 ± 0.0004
		0.23 – 0.36	1.48	0.049	0.597	0.320	0.296	0.662	-0.0506 ± 0.0351 ± 0.0019	-0.0506 ± 0.0351 ± 0.0019
		0.36 – 0.54	1.50	0.047	0.643	0.319	0.449	0.603	0.0012 ± 0.0164 ± 0.0028	0.0012 ± 0.0164 ± 0.0028
		0.54 – 2.00	1.55	0.045	0.692	0.323	0.703	0.536	-0.0097 ± 0.0148 ± 0.0059	-0.0097 ± 0.0148 ± 0.0059
	0.37 – 0.49	0.00 – 0.23	1.40	0.055	0.505	0.422	0.152	0.774	-0.0436 ± 0.0292 ± 0.0047	-0.0436 ± 0.0292 ± 0.0047
		0.23 – 0.36	1.45	0.051	0.566	0.423	0.298	0.701	0.0326 ± 0.0448 ± 0.0067	0.0326 ± 0.0448 ± 0.0067
		0.36 – 0.54	1.49	0.048	0.615	0.423	0.448	0.640	-0.0044 ± 0.0290 ± 0.0076	-0.0044 ± 0.0290 ± 0.0076
		0.54 – 2.00	1.53	0.046	0.669	0.424	0.749	0.568	-0.0085 ± 0.0167 ± 0.0085	-0.0085 ± 0.0167 ± 0.0085
	0.49 – 0.70	0.00 – 0.23	1.37	0.056	0.487	0.579	0.151	0.794	0.0407 ± 0.0309 ± 0.0005	0.0407 ± 0.0309 ± 0.0005
		0.23 – 0.36	1.41	0.053	0.532	0.580	0.298	0.743	-0.0173 ± 0.0447 ± 0.0051	-0.0173 ± 0.0447 ± 0.0051
		0.36 – 0.54	1.44	0.050	0.575	0.578	0.446	0.691	-0.0574 ± 0.0479 ± 0.0074	-0.0574 ± 0.0479 ± 0.0074
		0.54 – 2.00	1.51	0.047	0.638	0.573	0.785	0.611	-0.0173 ± 0.0215 ± 0.0103	-0.0173 ± 0.0215 ± 0.0103
0.072 – 0.098	0.20 – 0.28	0.00 – 0.23	2.10	0.084	0.484	0.239	0.140	0.791	0.0065 ± 0.0197 ± 0.0025	0.0065 ± 0.0197 ± 0.0025
		0.23 – 0.36	2.37	0.084	0.547	0.237	0.294	0.724	0.0119 ± 0.0219 ± 0.0009	0.0119 ± 0.0219 ± 0.0009
		0.36 – 0.54	2.46	0.084	0.569	0.238	0.440	0.695	-0.0003 ± 0.0204 ± 0.0012	-0.0003 ± 0.0204 ± 0.0012
		0.54 – 2.00	2.72	0.083	0.632	0.244	0.644	0.622	-0.0378 ± 0.0346 ± 0.0010	-0.0378 ± 0.0346 ± 0.0010
	0.28 – 0.37	0.00 – 0.23	1.88	0.084	0.432	0.321	0.142	0.836	0.0284 ± 0.0212 ± 0.0009	0.0284 ± 0.0212 ± 0.0009
		0.23 – 0.36	2.13	0.084	0.490	0.322	0.292	0.779	-0.0044 ± 0.0328 ± 0.0007	-0.0044 ± 0.0328 ± 0.0007
		0.36 – 0.54	2.26	0.084	0.523	0.320	0.445	0.742	0.0403 ± 0.0238 ± 0.0033	0.0403 ± 0.0238 ± 0.0033
		0.54 – 2.00	2.48	0.084	0.575	0.324	0.678	0.685	-0.0178 ± 0.0272 ± 0.0064	-0.0178 ± 0.0272 ± 0.0064
	0.37 – 0.49	0.00 – 0.23	1.82	0.084	0.418	0.423	0.146	0.847	-0.0327 ± 0.0248 ± 0.0004	-0.0327 ± 0.0248 ± 0.0004
		0.23 – 0.36	1.95	0.084	0.448	0.424	0.292	0.819	0.0074 ± 0.0329 ± 0.0025	0.0074 ± 0.0329 ± 0.0025
		0.36 – 0.54	2.17	0.084	0.502	0.424	0.442	0.767	-0.0509 ± 0.0335 ± 0.0008	-0.0509 ± 0.0335 ± 0.0008
		0.54 – 2.00	2.37	0.084	0.546	0.425	0.724	0.715	-0.0277 ± 0.0269 ± 0.0055	-0.0277 ± 0.0269 ± 0.0055
	0.49 – 0.70	0.00 – 0.23	1.78	0.084	0.407	0.579	0.148	0.856	-0.0445 ± 0.0288 ± 0.0039	-0.0445 ± 0.0288 ± 0.0039
		0.23 – 0.36	1.85	0.084	0.425	0.581	0.295	0.840	0.0029 ± 0.0304 ± 0.0029	0.0029 ± 0.0304 ± 0.0029
		0.36 – 0.54	2.00	0.084	0.461	0.582	0.442	0.808	-0.0041 ± 0.0368 ± 0.0094	-0.0041 ± 0.0368 ± 0.0094
		0.54 – 2.00	2.26	0.084	0.524	0.580	0.751	0.743	-0.0792 ± 0.0297 ± 0.0114	-0.0792 ± 0.0297 ± 0.0114
0.098 – 0.138	0.20 – 0.28	0.00 – 0.23	2.86	0.116	0.477	0.239	0.138	0.799	-0.0209 ± 0.0170 ± 0.0029	-0.0209 ± 0.0170 ± 0.0029
		0.23 – 0.36	3.17	0.116	0.531	0.238	0.292	0.743	-0.0127 ± 0.0220 ± 0.0039	-0.0127 ± 0.0220 ± 0.0039
		0.36 – 0.54	3.25	0.115	0.545	0.239	0.442	0.724	-0.0519 ± 0.0228 ± 0.0043	-0.0519 ± 0.0228 ± 0.0043
		0.54 – 2.00	3.54	0.116	0.593	0.244	0.645	0.671	0.0258 ± 0.0423 ± 0.0047	0.0258 ± 0.0423 ± 0.0047
	0.28 – 0.37	0.00 – 0.23	2.52	0.116	0.420	0.321	0.144	0.844	-0.0312 ± 0.0183 ± 0.0046	-0.0312 ± 0.0183 ± 0.0046
		0.23 – 0.36	2.77	0.116	0.462	0.323	0.291	0.806	-0.0251 ± 0.0257 ± 0.0021	-0.0251 ± 0.0257 ± 0.0021
		0.36 – 0.54	2.98	0.116	0.500	0.322	0.444	0.766	0.0476 ± 0.0236 ± 0.0080	0.0476 ± 0.0236 ± 0.0080
		0.54 – 2.00	3.17	0.116	0.532	0.324	0.675	0.732	0.0017 ± 0.0301 ± 0.0045	0.0017 ± 0.0301 ± 0.0045
	0.37 – 0.49	0.00 – 0.23	2.39	0.116	0.399	0.422	0.148	0.860	-0.0359 ± 0.0215 ± 0.0021	-0.0359 ± 0.0215 ± 0.0021
		0.23 – 0.36	2.48	0.116	0.413	0.425	0.293	0.845	-0.0170 ± 0.0245 ± 0.0075	-0.0170 ± 0.0245 ± 0.0075
		0.36 – 0.54	2.80	0.116	0.467	0.426	0.441	0.797	-0.0005 ± 0.0287 ± 0.0052	-0.0005 ± 0.0287 ± 0.0052
		0.54 – 2.00	3.00	0.115	0.504	0.424	0.716	0.756	-0.0260 ± 0.0275 ± 0.0086	-0.0260 ± 0.0275 ± 0.0086
	0.49 – 0.70	0.00 – 0.23	2.37	0.116	0.396	0.579	0.150	0.863	-0.0245 ± 0.0252 ± 0.0055	-0.0245 ± 0.0252 ± 0.0055
		0.23 – 0.36	2.39	0.116	0.399	0.577	0.295	0.859	-0.0372 ± 0.0257 ± 0.0048	-0.0372 ± 0.0257 ± 0.0048
		0.36 – 0.54	2.55	0.116	0.426	0.583	0.441	0.834	-0.0041 ± 0.0279 ± 0.0043	-0.0041 ± 0.0279 ± 0.0043
		0.54 – 2.00	2.92	0.115	0.490	0.581	0.747	0.774	-0.0179 ± 0.0281 ± 0.0089	-0.0179 ± 0.0281 ± 0.0089
0.138 – 0.600	0.20 – 0.28	0.00 – 0.23	4.91	0.204	0.467	0.239	0.141	0.811	-0.0201 ± 0.0132 ± 0.0011	-0.0201 ± 0.0132 ± 0.0011
		0.23 – 0.36	5.22	0.212	0.486	0.240	0.290	0.790	-0.0226 ± 0.0184 ± 0.0013	-0.0226 ± 0.0184 ± 0.0013
		0.36 – 0.54	5.18	0.205	0.499	0.239	0.443	0.775	-0.0208 ± 0.0250 ± 0.0013	-0.0208 ± 0.0250 ± 0.0013
		0.54 – 2.00	5.40	0.211	0.509	0.243	0.645	0.767	-0.0129 ± 0.0616 ± 0.0024	-0.0129 ± 0.0616 ± 0.0024
	0.28 – 0.37	0.00 – 0.23	4.41	0.199	0.426	0.321	0.148	0.842	-0.0073 ± 0.0147 ± 0.0038	-0.0073 ± 0.0147 ± 0.0038
		0.23 – 0.36	4.55	0.208	0.426	0.322	0.291	0.839	-0.0198 ± 0.0189 ± 0.0014	-0.0198 ± 0.0189 ± 0.0014
		0.36 – 0.54	4.80	0.211	0.450	0.323	0.440	0.816	-0.0049 ± 0.0219 ± 0.0044	-0.0049 ± 0.0219 ± 0.0044
		0.54 – 2.00	4.79	0.204	0.464	0.324	0.679	0.802	-0.0076 ± 0.0359 ± 0.0015	-0.0076 ± 0.0359 ± 0.0015
	0.37 – 0.49	0.00 – 0.23	4.26	0.197	0.414	0.422	0.149	0.852	-0.0062 ± 0.0175 ± 0.0045	-0.0062 ± 0.0175 ± 0.0045
		0.23 – 0.36	4.31	0.203	0.410	0.424	0.294	0.852	-0.0288 ± 0.0195 ± 0.0066	-0.0288 ± 0.0195 ± 0.0066
		0.36 – 0.54	4.59	0.212	0.423	0.425	0.438	0.840	-0.0345 ± 0.0228 ± 0.0045	-0.0345 ± 0.0228 ± 0.0045
		0.54 – 2.00	4.78	0.208	0.453	0.426	0.712	0.809	-0.0379 ± 0.0283 ± 0.0081	-0.0379 ± 0.0283 ± 0.0081
	0.49 – 0.70	0.00 – 0.23	4.25	0.197	0.413	0.574	0.152	0.852	-0.0289 ± 0.0212 ± 0.0093	-0.0289 ± 0.0212 ± 0.0093
		0.23 – 0.36	4.13	0.198	0.400	0.574	0.295	0.861	-0.0250 ± 0.0218 ± 0.0034	-0.0250 ± 0.0218 ± 0.0034
		0.36 – 0.54	4.25	0.203	0.405	0.579	0.443	0.855	-0.0831 ± 0.0221 ± 0.0095	-0.0831 ± 0.0221 ± 0.0095
		0.54 – 2.00	4.67	0.210	0.437	0.581	0.726	0.825	-0.0549 ± 0.0254 ± 0.0100	-0.0549 ± 0.0254 ± 0.0100

Table 70. Three-dimensionally binned SFA and CSA amplitudes of the $\sin(\phi_S)$ modulation for π^- as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin			Average kinematics						K^+	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(\phi_S)/\sqrt{2\epsilon(1+\epsilon)} \rangle_{\mathrm{U}\perp}$	$2\langle \sin(\phi_S) \rangle_{\mathrm{U}\perp}$
0.023 – 0.072	0.20 – 0.28	0.00 – 0.23	1.48	0.052	0.565	0.239	0.149	0.705	0.0145 ± 0.0637 ± 0.0081	0.0145 ± 0.0637 ± 0.0081
		0.23 – 0.36	1.54	0.048	0.638	0.237	0.297	0.612	-0.0125 ± 0.0491 ± 0.0051	-0.0125 ± 0.0491 ± 0.0051
		0.36 – 0.54	1.55	0.046	0.674	0.239	0.444	0.562	-0.0772 ± 0.0328 ± 0.0051	-0.0772 ± 0.0328 ± 0.0051
		0.54 – 2.00	1.59	0.043	0.734	0.242	0.670	0.476	-0.0255 ± 0.0415 ± 0.0053	-0.0255 ± 0.0415 ± 0.0053
	0.28 – 0.37	0.00 – 0.23	1.44	0.054	0.529	0.321	0.150	0.747	-0.0174 ± 0.0597 ± 0.0017	-0.0174 ± 0.0597 ± 0.0017
		0.23 – 0.36	1.51	0.050	0.603	0.322	0.298	0.657	0.0435 ± 0.0821 ± 0.0077	0.0435 ± 0.0821 ± 0.0077
		0.36 – 0.54	1.54	0.047	0.645	0.322	0.448	0.601	-0.0389 ± 0.0418 ± 0.0117	-0.0389 ± 0.0418 ± 0.0117
		0.54 – 2.00	1.56	0.044	0.701	0.326	0.722	0.523	-0.0157 ± 0.0335 ± 0.0096	-0.0157 ± 0.0335 ± 0.0096
	0.37 – 0.49	0.00 – 0.23	1.43	0.055	0.511	0.422	0.148	0.769	-0.0456 ± 0.0564 ± 0.0033	-0.0456 ± 0.0564 ± 0.0033
		0.23 – 0.36	1.47	0.052	0.557	0.424	0.297	0.713	0.1077 ± 0.0973 ± 0.0111	0.1077 ± 0.0973 ± 0.0111
		0.36 – 0.54	1.51	0.050	0.608	0.424	0.449	0.651	0.0817 ± 0.0645 ± 0.0178	0.0817 ± 0.0645 ± 0.0178
		0.54 – 2.00	1.56	0.046	0.671	0.428	0.763	0.565	-0.0033 ± 0.0342 ± 0.0012	-0.0033 ± 0.0342 ± 0.0012
	0.49 – 0.70	0.00 – 0.23	1.42	0.057	0.493	0.572	0.150	0.787	0.0348 ± 0.0672 ± 0.0063	0.0348 ± 0.0672 ± 0.0063
		0.23 – 0.36	1.44	0.054	0.534	0.573	0.298	0.740	-0.1511 ± 0.0917 ± 0.0091	-0.1511 ± 0.0917 ± 0.0091
		0.36 – 0.54	1.49	0.051	0.587	0.576	0.452	0.675	0.0320 ± 0.0949 ± 0.0033	0.0320 ± 0.0949 ± 0.0033
		0.54 – 2.00	1.53	0.048	0.637	0.580	0.805	0.612	0.0423 ± 0.0381 ± 0.0007	0.0423 ± 0.0381 ± 0.0007
0.072 – 0.098	0.20 – 0.28	0.00 – 0.23	2.21	0.084	0.508	0.241	0.142	0.770	-0.1186 ± 0.0598 ± 0.0047	-0.1186 ± 0.0598 ± 0.0047
		0.23 – 0.36	2.43	0.084	0.562	0.240	0.295	0.709	-0.0758 ± 0.0575 ± 0.0042	-0.0758 ± 0.0575 ± 0.0042
		0.36 – 0.54	2.50	0.084	0.578	0.241	0.440	0.683	-0.0036 ± 0.0566 ± 0.0061	-0.0036 ± 0.0566 ± 0.0061
		0.54 – 2.00	2.72	0.084	0.630	0.244	0.652	0.624	0.0714 ± 0.0817 ± 0.0053	0.0714 ± 0.0817 ± 0.0053
	0.28 – 0.37	0.00 – 0.23	1.98	0.084	0.455	0.323	0.142	0.816	-0.0466 ± 0.0498 ± 0.0051	-0.0466 ± 0.0498 ± 0.0051
		0.23 – 0.36	2.21	0.084	0.510	0.324	0.293	0.762	0.0162 ± 0.0789 ± 0.0163	0.0162 ± 0.0789 ± 0.0163
		0.36 – 0.54	2.38	0.084	0.550	0.324	0.446	0.714	0.0313 ± 0.0581 ± 0.0003	0.0313 ± 0.0581 ± 0.0003
		0.54 – 2.00	2.54	0.084	0.587	0.327	0.690	0.669	-0.0853 ± 0.0564 ± 0.0010	-0.0853 ± 0.0564 ± 0.0010
	0.37 – 0.49	0.00 – 0.23	1.88	0.085	0.429	0.423	0.145	0.839	0.0647 ± 0.0463 ± 0.0083	0.0647 ± 0.0463 ± 0.0083
		0.23 – 0.36	2.07	0.084	0.475	0.425	0.294	0.795	0.0570 ± 0.0707 ± 0.0036	0.0570 ± 0.0707 ± 0.0036
		0.36 – 0.54	2.23	0.084	0.512	0.427	0.445	0.758	-0.1360 ± 0.0763 ± 0.0076	-0.1360 ± 0.0763 ± 0.0076
		0.54 – 2.00	2.44	0.084	0.566	0.430	0.735	0.695	0.0357 ± 0.0506 ± 0.0088	0.0357 ± 0.0506 ± 0.0088
	0.49 – 0.70	0.00 – 0.23	1.88	0.085	0.427	0.577	0.150	0.842	-0.0429 ± 0.0556 ± 0.0014	-0.0429 ± 0.0556 ± 0.0014
		0.23 – 0.36	1.94	0.084	0.447	0.575	0.297	0.820	0.0603 ± 0.0647 ± 0.0020	0.0603 ± 0.0647 ± 0.0020
		0.36 – 0.54	2.06	0.085	0.470	0.583	0.446	0.798	0.0914 ± 0.0677 ± 0.0185	0.0914 ± 0.0677 ± 0.0185
		0.54 – 2.00	2.33	0.084	0.538	0.587	0.768	0.728	0.0289 ± 0.0510 ± 0.0066	0.0289 ± 0.0510 ± 0.0066
0.098 – 0.138	0.20 – 0.28	0.00 – 0.23	2.96	0.116	0.494	0.241	0.139	0.785	0.0535 ± 0.0481 ± 0.0029	0.0535 ± 0.0481 ± 0.0029
		0.23 – 0.36	3.31	0.116	0.554	0.239	0.290	0.718	-0.0209 ± 0.0640 ± 0.0016	-0.0209 ± 0.0640 ± 0.0016
		0.36 – 0.54	3.25	0.115	0.548	0.240	0.443	0.720	-0.0305 ± 0.0607 ± 0.0005	-0.0305 ± 0.0607 ± 0.0005
		0.54 – 2.00	3.53	0.115	0.596	0.245	0.650	0.664	-0.1164 ± 0.0996 ± 0.0082	-0.1164 ± 0.0996 ± 0.0082
	0.28 – 0.37	0.00 – 0.23	2.64	0.116	0.441	0.324	0.142	0.829	0.0347 ± 0.0393 ± 0.0003	0.0347 ± 0.0393 ± 0.0003
		0.23 – 0.36	2.91	0.116	0.485	0.326	0.292	0.787	0.0573 ± 0.0651 ± 0.0004	0.0573 ± 0.0651 ± 0.0004
		0.36 – 0.54	3.08	0.115	0.519	0.323	0.446	0.746	-0.0433 ± 0.0546 ± 0.0012	-0.0433 ± 0.0546 ± 0.0012
		0.54 – 2.00	3.20	0.116	0.535	0.327	0.682	0.726	-0.0564 ± 0.0659 ± 0.0122	-0.0564 ± 0.0659 ± 0.0122
	0.37 – 0.49	0.00 – 0.23	2.54	0.116	0.425	0.424	0.148	0.841	-0.0153 ± 0.0413 ± 0.0084	-0.0153 ± 0.0413 ± 0.0084
		0.23 – 0.36	2.66	0.116	0.441	0.427	0.291	0.824	0.0295 ± 0.0487 ± 0.0034	0.0295 ± 0.0487 ± 0.0034
		0.36 – 0.54	3.00	0.117	0.497	0.428	0.442	0.773	-0.0285 ± 0.0598 ± 0.0037	-0.0285 ± 0.0598 ± 0.0037
		0.54 – 2.00	3.21	0.115	0.539	0.428	0.716	0.723	0.0040 ± 0.0519 ± 0.0042	0.0040 ± 0.0519 ± 0.0042
	0.49 – 0.70	0.00 – 0.23	2.47	0.116	0.412	0.574	0.150	0.851	0.0586 ± 0.0455 ± 0.0041	0.0586 ± 0.0455 ± 0.0041
		0.23 – 0.36	2.50	0.116	0.418	0.577	0.296	0.845	0.0329 ± 0.0493 ± 0.0082	0.0329 ± 0.0493 ± 0.0082
		0.36 – 0.54	2.70	0.116	0.451	0.583	0.443	0.815	0.0986 ± 0.0499 ± 0.0080	0.0986 ± 0.0499 ± 0.0080
		0.54 – 2.00	3.06	0.115	0.514	0.588	0.752	0.752	-0.0672 ± 0.0484 ± 0.0019	-0.0672 ± 0.0484 ± 0.0019
0.138 – 0.600	0.20 – 0.28	0.00 – 0.23	5.15	0.207	0.485	0.242	0.138	0.795	0.0372 ± 0.0346 ± 0.0073	0.0372 ± 0.0346 ± 0.0073
		0.23 – 0.36	5.33	0.208	0.505	0.243	0.292	0.773	-0.0102 ± 0.0490 ± 0.0040	-0.0102 ± 0.0490 ± 0.0040
		0.36 – 0.54	5.06	0.196	0.508	0.241	0.445	0.765	0.0418 ± 0.0661 ± 0.0009	0.0418 ± 0.0661 ± 0.0009
		0.54 – 2.00	5.22	0.211	0.493	0.246	0.645	0.779	0.1093 ± 0.1207 ± 0.0285	0.1093 ± 0.1207 ± 0.0285
	0.28 – 0.37	0.00 – 0.23	4.76	0.204	0.449	0.323	0.142	0.825	-0.0225 ± 0.0294 ± 0.0014	-0.0225 ± 0.0294 ± 0.0014
		0.23 – 0.36	5.01	0.211	0.462	0.325	0.289	0.810	-0.0415 ± 0.0388 ± 0.0053	-0.0415 ± 0.0388 ± 0.0053
		0.36 – 0.54	5.04	0.203	0.488	0.325	0.443	0.783	-0.0477 ± 0.0438 ± 0.0024	-0.0477 ± 0.0438 ± 0.0024
		0.54 – 2.00	4.69	0.198	0.464	0.327	0.681	0.798	-0.0936 ± 0.0719 ± 0.0117	-0.0936 ± 0.0719 ± 0.0117
	0.37 – 0.49	0.00 – 0.23	4.63	0.204	0.435	0.424	0.150	0.836	0.0275 ± 0.0293 ± 0.0027	0.0275 ± 0.0293 ± 0.0027
		0.23 – 0.36	4.62	0.204	0.437	0.425	0.292	0.831	0.0310 ± 0.0338 ± 0.0043	0.0310 ± 0.0338 ± 0.0043
		0.36 – 0.54	4.91	0.210	0.458	0.426	0.439	0.812	-0.0374 ± 0.0370 ± 0.0004	-0.0374 ± 0.0370 ± 0.0004
		0.54 – 2.00	5.02	0.204	0.483	0.428	0.707	0.784	-0.0001 ± 0.0470 ± 0.0007	-0.0001 ± 0.0470 ± 0.0007
	0.49 – 0.70	0.00 – 0.23	4.55	0.204	0.426	0.576	0.149	0.843	0.0344 ± 0.0339 ± 0.0013	0.0344 ± 0.0339 ± 0.0013
		0.23 – 0.36	4.52	0.206	0.422	0.577	0.296	0.844	-0.0038 ± 0.0343 ± 0.0077	-0.0038 ± 0.0343 ± 0.0077
		0.36 – 0.54	4.63	0.207	0.435	0.583	0.443	0.831	0.0206 ± 0.0328 ± 0.0051	0.0206 ± 0.0328 ± 0.0051
		0.54 – 2.00	5.06	0.210	0.473	0.589	0.731	0.796	-0.0549 ± 0.0357 ± 0.0011	-0.0549 ± 0.0357 ± 0.0011

Table 71. Three-dimensionally binned SFA and CSA amplitudes of the $\sin(\phi_S)$ modulation for K^+ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin			Average kinematics						K^-	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(\phi_S)/\sqrt{2\epsilon(1+\epsilon)} \rangle_{U\perp}$	$2\langle \sin(\phi_S) \rangle_{U\perp}$
0.023 – 0.072	0.20 – 0.28	0.00 – 0.23	1.48	0.051	0.575	0.236	0.152	0.692	-0.0369 ± 0.0914 ± 0.0113	-0.0369 ± 0.0914 ± 0.0113
		0.23 – 0.36	1.51	0.047	0.646	0.236	0.298	0.601	-0.0387 ± 0.0574 ± 0.0010	-0.0387 ± 0.0574 ± 0.0010
		0.36 – 0.54	1.54	0.045	0.684	0.237	0.444	0.547	0.0102 ± 0.0419 ± 0.0028	0.0102 ± 0.0419 ± 0.0028
		0.54 – 2.00	1.61	0.043	0.744	0.242	0.666	0.461	-0.0639 ± 0.0530 ± 0.0030	-0.0639 ± 0.0530 ± 0.0030
	0.28 – 0.37	0.00 – 0.23	1.45	0.053	0.537	0.319	0.151	0.738	-0.0814 ± 0.0807 ± 0.0075	-0.0814 ± 0.0807 ± 0.0075
		0.23 – 0.36	1.50	0.049	0.608	0.320	0.296	0.650	-0.0773 ± 0.1189 ± 0.0146	-0.0773 ± 0.1189 ± 0.0146
		0.36 – 0.54	1.51	0.047	0.644	0.319	0.449	0.602	-0.0387 ± 0.0573 ± 0.0038	-0.0387 ± 0.0573 ± 0.0038
		0.54 – 2.00	1.56	0.044	0.701	0.324	0.724	0.523	-0.0728 ± 0.0453 ± 0.0043	-0.0728 ± 0.0453 ± 0.0043
	0.37 – 0.49	0.00 – 0.23	1.40	0.054	0.513	0.424	0.146	0.768	-0.1755 ± 0.0901 ± 0.0217	-0.1755 ± 0.0901 ± 0.0217
		0.23 – 0.36	1.48	0.051	0.579	0.422	0.298	0.689	0.0898 ± 0.1313 ± 0.0002	0.0898 ± 0.1313 ± 0.0002
		0.36 – 0.54	1.53	0.049	0.622	0.423	0.448	0.633	0.1438 ± 0.0916 ± 0.0009	0.1438 ± 0.0916 ± 0.0009
		0.54 – 2.00	1.54	0.045	0.674	0.425	0.770	0.562	0.0170 ± 0.0493 ± 0.0007	0.0170 ± 0.0493 ± 0.0007
	0.49 – 0.70	0.00 – 0.23	1.41	0.055	0.508	0.562	0.151	0.771	-0.1288 ± 0.1033 ± 0.0009	-0.1288 ± 0.1033 ± 0.0009
		0.23 – 0.36	1.44	0.052	0.550	0.566	0.298	0.721	-0.0361 ± 0.1260 ± 0.0055	-0.0361 ± 0.1260 ± 0.0055
		0.36 – 0.54	1.49	0.050	0.595	0.572	0.446	0.664	-0.0678 ± 0.1422 ± 0.0002	-0.0678 ± 0.1422 ± 0.0002
		0.54 – 2.00	1.53	0.046	0.662	0.569	0.799	0.578	-0.0088 ± 0.0645 ± 0.0070	-0.0088 ± 0.0645 ± 0.0070
0.072 – 0.098	0.20 – 0.28	0.00 – 0.23	2.18	0.084	0.503	0.239	0.139	0.775	-0.0149 ± 0.0840 ± 0.0114	-0.0149 ± 0.0840 ± 0.0114
		0.23 – 0.36	2.46	0.084	0.568	0.237	0.294	0.701	0.0926 ± 0.0931 ± 0.0134	0.0926 ± 0.0931 ± 0.0134
		0.36 – 0.54	2.54	0.084	0.586	0.237	0.440	0.677	-0.1069 ± 0.0724 ± 0.0036	-0.1069 ± 0.0724 ± 0.0036
		0.54 – 2.00	2.75	0.084	0.637	0.242	0.648	0.614	-0.0735 ± 0.1109 ± 0.0077	-0.0735 ± 0.1109 ± 0.0077
	0.28 – 0.37	0.00 – 0.23	1.95	0.084	0.448	0.323	0.138	0.824	-0.0150 ± 0.0683 ± 0.0041	-0.0150 ± 0.0683 ± 0.0041
		0.23 – 0.36	2.24	0.084	0.518	0.322	0.292	0.752	-0.0437 ± 0.1423 ± 0.0222	-0.0437 ± 0.1423 ± 0.0222
		0.36 – 0.54	2.40	0.084	0.555	0.321	0.444	0.712	0.0557 ± 0.0794 ± 0.0125	0.0557 ± 0.0794 ± 0.0125
		0.54 – 2.00	2.48	0.084	0.573	0.324	0.693	0.689	-0.0824 ± 0.0848 ± 0.0019	-0.0824 ± 0.0848 ± 0.0019
	0.37 – 0.49	0.00 – 0.23	1.84	0.084	0.426	0.424	0.143	0.842	-0.0427 ± 0.0775 ± 0.0030	-0.0427 ± 0.0775 ± 0.0030
		0.23 – 0.36	2.06	0.084	0.475	0.424	0.294	0.794	0.0246 ± 0.1049 ± 0.0130	0.0246 ± 0.1049 ± 0.0130
		0.36 – 0.54	2.27	0.083	0.528	0.424	0.443	0.743	0.1582 ± 0.1162 ± 0.0211	0.1582 ± 0.1162 ± 0.0211
		0.54 – 2.00	2.45	0.084	0.566	0.423	0.727	0.695	-0.0334 ± 0.0821 ± 0.0173	-0.0334 ± 0.0821 ± 0.0173
	0.49 – 0.70	0.00 – 0.23	1.89	0.085	0.431	0.567	0.150	0.837	0.0443 ± 0.0983 ± 0.0061	0.0443 ± 0.0983 ± 0.0061
		0.23 – 0.36	2.00	0.085	0.455	0.570	0.295	0.811	0.0803 ± 0.1013 ± 0.0002	0.0803 ± 0.1013 ± 0.0002
		0.36 – 0.54	2.16	0.084	0.495	0.577	0.440	0.775	-0.1098 ± 0.1308 ± 0.0098	-0.1098 ± 0.1308 ± 0.0098
		0.54 – 2.00	2.42	0.084	0.556	0.570	0.772	0.707	-0.1035 ± 0.0909 ± 0.0047	-0.1035 ± 0.0909 ± 0.0047
0.098 – 0.138	0.20 – 0.28	0.00 – 0.23	3.02	0.116	0.505	0.240	0.138	0.774	0.1298 ± 0.0699 ± 0.0051	0.1298 ± 0.0699 ± 0.0051
		0.23 – 0.36	3.26	0.115	0.549	0.241	0.290	0.727	-0.0757 ± 0.0981 ± 0.0032	-0.0757 ± 0.0981 ± 0.0032
		0.36 – 0.54	3.30	0.115	0.556	0.238	0.444	0.713	-0.0192 ± 0.0832 ± 0.0169	-0.0192 ± 0.0832 ± 0.0169
		0.54 – 2.00	3.61	0.115	0.607	0.243	0.649	0.655	-0.0265 ± 0.1294 ± 0.0358	-0.0265 ± 0.1294 ± 0.0358
	0.28 – 0.37	0.00 – 0.23	2.69	0.116	0.450	0.323	0.142	0.819	-0.1181 ± 0.0652 ± 0.0125	-0.1181 ± 0.0652 ± 0.0125
		0.23 – 0.36	2.98	0.116	0.501	0.322	0.294	0.769	0.0005 ± 0.1044 ± 0.0212	0.0005 ± 0.1044 ± 0.0212
		0.36 – 0.54	3.06	0.115	0.516	0.324	0.450	0.750	-0.1002 ± 0.0841 ± 0.0175	-0.1002 ± 0.0841 ± 0.0175
		0.54 – 2.00	3.34	0.116	0.559	0.324	0.694	0.703	-0.0677 ± 0.0874 ± 0.0065	-0.0677 ± 0.0874 ± 0.0065
	0.37 – 0.49	0.00 – 0.23	2.42	0.115	0.408	0.423	0.149	0.854	-0.1003 ± 0.0685 ± 0.0114	-0.1003 ± 0.0685 ± 0.0114
		0.23 – 0.36	2.69	0.117	0.447	0.427	0.293	0.819	0.0843 ± 0.0883 ± 0.0112	0.0843 ± 0.0883 ± 0.0112
		0.36 – 0.54	2.94	0.116	0.491	0.428	0.442	0.778	0.0207 ± 0.1032 ± 0.0186	0.0207 ± 0.1032 ± 0.0186
		0.54 – 2.00	3.19	0.114	0.540	0.424	0.741	0.723	0.0687 ± 0.0809 ± 0.0145	0.0687 ± 0.0809 ± 0.0145
	0.49 – 0.70	0.00 – 0.23	2.43	0.115	0.407	0.563	0.149	0.854	-0.0282 ± 0.0923 ± 0.0024	-0.0282 ± 0.0923 ± 0.0024
		0.23 – 0.36	2.47	0.115	0.416	0.572	0.295	0.848	-0.0027 ± 0.0898 ± 0.0044	-0.0027 ± 0.0898 ± 0.0044
		0.36 – 0.54	2.72	0.116	0.453	0.577	0.435	0.813	0.1447 ± 0.1003 ± 0.0182	0.1447 ± 0.1003 ± 0.0182
		0.54 – 2.00	3.08	0.115	0.517	0.574	0.764	0.750	-0.1080 ± 0.1017 ± 0.0136	-0.1080 ± 0.1017 ± 0.0136
0.138 – 0.600	0.20 – 0.28	0.00 – 0.23	4.98	0.201	0.481	0.241	0.144	0.800	-0.0568 ± 0.0481 ± 0.0082	-0.0568 ± 0.0481 ± 0.0082
		0.23 – 0.36	5.30	0.206	0.507	0.241	0.290	0.770	-0.0865 ± 0.0714 ± 0.0166	-0.0865 ± 0.0714 ± 0.0166
		0.36 – 0.54	5.32	0.204	0.518	0.239	0.449	0.757	-0.0643 ± 0.0759 ± 0.0135	-0.0643 ± 0.0759 ± 0.0135
		0.54 – 2.00	5.44	0.205	0.527	0.245	0.663	0.747	0.0063 ± 0.1900 ± 0.0742	0.0063 ± 0.1900 ± 0.0742
	0.28 – 0.37	0.00 – 0.23	4.71	0.203	0.451	0.322	0.146	0.822	-0.1626 ± 0.0495 ± 0.0048	-0.1626 ± 0.0495 ± 0.0048
		0.23 – 0.36	4.92	0.209	0.462	0.325	0.291	0.809	-0.0188 ± 0.0591 ± 0.0070	-0.0188 ± 0.0591 ± 0.0070
		0.36 – 0.54	4.90	0.205	0.473	0.325	0.441	0.795	0.0397 ± 0.0697 ± 0.0111	0.0397 ± 0.0697 ± 0.0111
		0.54 – 2.00	5.07	0.200	0.503	0.324	0.691	0.765	-0.0581 ± 0.0878 ± 0.0545	-0.0581 ± 0.0878 ± 0.0545
	0.37 – 0.49	0.00 – 0.23	4.35	0.195	0.430	0.420	0.149	0.839	-0.0672 ± 0.0599 ± 0.0089	-0.0672 ± 0.0599 ± 0.0089
		0.23 – 0.36	4.49	0.205	0.422	0.423	0.293	0.843	0.0003 ± 0.0647 ± 0.0170	0.0003 ± 0.0647 ± 0.0170
		0.36 – 0.54	4.75	0.207	0.450	0.426	0.437	0.817	-0.0040 ± 0.0689 ± 0.0210	-0.0040 ± 0.0689 ± 0.0210
		0.54 – 2.00	4.87	0.203	0.474	0.425	0.728	0.792	-0.0688 ± 0.0837 ± 0.0287	-0.0688 ± 0.0837 ± 0.0287
	0.49 – 0.70	0.00 – 0.23	4.39	0.196	0.432	0.562	0.154	0.839	0.0544 ± 0.0740 ± 0.0060	0.0544 ± 0.0740 ± 0.0060
		0.23 – 0.36	4.35	0.201	0.419	0.571	0.294	0.846	-0.0864 ± 0.0844 ± 0.0063	-0.0864 ± 0.0844 ± 0.0063
		0.36 – 0.54	4.56	0.207	0.429	0.577	0.440	0.838	-0.0562 ± 0.0735 ± 0.0277	-0.0562 ± 0.0735 ± 0.0277
		0.54 – 2.00	4.85	0.204	0.470	0.579	0.735	0.796	-0.1377 ± 0.0756 ± 0.0368	-0.1377 ± 0.0756 ± 0.0368

Table 72. Three-dimensionally binned SFA and CSA amplitudes of the $\sin(\phi_S)$ modulation for K^- as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin			Average kinematics						p	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(\phi_S)/\sqrt{2\epsilon(1+\epsilon)} \rangle_{U\perp}$	$2\langle \sin(\phi_S) \rangle_{U\perp}$
0.023 – 0.073	0.20 – 0.34	0.00 – 0.24	1.60	0.048	0.656	0.281	0.167	0.598	0.0617 ± 0.1000 ± 0.0052	0.0617 ± 0.1000 ± 0.0052
		0.24 – 0.40	1.61	0.045	0.698	0.274	0.327	0.535	-0.0029 ± 0.0537 ± 0.0049	-0.0029 ± 0.0537 ± 0.0049
		0.40 – 0.57	1.60	0.044	0.713	0.271	0.483	0.512	0.0120 ± 0.0349 ± 0.0093	0.0120 ± 0.0349 ± 0.0093
		0.57 – 2.00	1.60	0.043	0.734	0.276	0.728	0.480	-0.0025 ± 0.0310 ± 0.0010	-0.0025 ± 0.0310 ± 0.0010
	0.34 – 0.43	0.00 – 0.24	1.48	0.053	0.544	0.384	0.157	0.736	0.1292 ± 0.0669 ± 0.0170	0.1292 ± 0.0669 ± 0.0170
		0.24 – 0.40	1.51	0.050	0.603	0.384	0.322	0.659	0.0976 ± 0.0983 ± 0.0063	0.0976 ± 0.0983 ± 0.0063
		0.40 – 0.57	1.54	0.049	0.632	0.383	0.483	0.620	-0.0436 ± 0.0576 ± 0.0031	-0.0436 ± 0.0576 ± 0.0031
		0.57 – 2.00	1.54	0.046	0.669	0.384	0.766	0.568	0.0337 ± 0.0367 ± 0.0151	0.0337 ± 0.0367 ± 0.0151
	0.43 – 0.52	0.00 – 0.24	1.43	0.056	0.503	0.473	0.159	0.777	-0.0780 ± 0.0691 ± 0.0021	-0.0780 ± 0.0691 ± 0.0021
		0.24 – 0.40	1.47	0.052	0.567	0.471	0.322	0.699	-0.1489 ± 0.1035 ± 0.0010	-0.1489 ± 0.1035 ± 0.0010
		0.40 – 0.57	1.50	0.050	0.597	0.472	0.481	0.663	0.0478 ± 0.0906 ± 0.0004	0.0478 ± 0.0906 ± 0.0004
		0.57 – 2.00	1.52	0.047	0.641	0.471	0.796	0.604	-0.0515 ± 0.0476 ± 0.0165	-0.0515 ± 0.0476 ± 0.0165
	0.52 – 0.70	0.00 – 0.24	1.40	0.057	0.487	0.588	0.153	0.795	-0.0244 ± 0.0762 ± 0.0096	-0.0244 ± 0.0762 ± 0.0096
		0.24 – 0.40	1.45	0.055	0.527	0.587	0.321	0.747	-0.1691 ± 0.1008 ± 0.0005	-0.1691 ± 0.1008 ± 0.0005
		0.40 – 0.57	1.46	0.052	0.561	0.589	0.482	0.707	0.1255 ± 0.1140 ± 0.0056	0.1255 ± 0.1140 ± 0.0056
		0.57 – 2.00	1.50	0.049	0.607	0.591	0.808	0.649	0.1302 ± 0.0505 ± 0.0098	0.1302 ± 0.0505 ± 0.0098
0.073 – 0.107	0.20 – 0.34	0.00 – 0.24	2.83	0.089	0.617	0.293	0.158	0.653	0.0712 ± 0.0910 ± 0.0088	0.0712 ± 0.0910 ± 0.0088
		0.24 – 0.40	2.91	0.088	0.638	0.285	0.321	0.624	-0.0251 ± 0.0837 ± 0.0085	-0.0251 ± 0.0837 ± 0.0085
		0.40 – 0.57	3.01	0.088	0.661	0.279	0.481	0.592	-0.0169 ± 0.0602 ± 0.0132	-0.0169 ± 0.0602 ± 0.0132
		0.57 – 2.00	3.03	0.088	0.666	0.282	0.718	0.584	0.0445 ± 0.0588 ± 0.0135	0.0445 ± 0.0588 ± 0.0135
	0.34 – 0.43	0.00 – 0.24	2.34	0.089	0.509	0.385	0.148	0.775	0.0168 ± 0.0553 ± 0.0037	0.0168 ± 0.0553 ± 0.0037
		0.24 – 0.40	2.49	0.088	0.545	0.385	0.317	0.732	0.0015 ± 0.0836 ± 0.0236	0.0015 ± 0.0836 ± 0.0236
		0.40 – 0.57	2.53	0.088	0.558	0.385	0.480	0.717	-0.1576 ± 0.0719 ± 0.0129	-0.1576 ± 0.0719 ± 0.0129
		0.57 – 2.00	2.63	0.088	0.575	0.385	0.744	0.694	0.0371 ± 0.0547 ± 0.0084	0.0371 ± 0.0547 ± 0.0084
	0.43 – 0.52	0.00 – 0.24	2.10	0.089	0.458	0.473	0.155	0.817	-0.0100 ± 0.0546 ± 0.0048	-0.0100 ± 0.0546 ± 0.0048
		0.24 – 0.40	2.22	0.088	0.485	0.473	0.319	0.789	0.0563 ± 0.0679 ± 0.0112	0.0563 ± 0.0679 ± 0.0112
		0.40 – 0.57	2.34	0.088	0.515	0.474	0.477	0.759	-0.0557 ± 0.0852 ± 0.0512	-0.0557 ± 0.0852 ± 0.0512
		0.57 – 2.00	2.45	0.088	0.538	0.472	0.773	0.731	0.0783 ± 0.0612 ± 0.0188	0.0783 ± 0.0612 ± 0.0188
	0.52 – 0.70	0.00 – 0.24	1.89	0.089	0.410	0.592	0.156	0.856	-0.1039 ± 0.0548 ± 0.0189	-0.1039 ± 0.0548 ± 0.0189
		0.24 – 0.40	1.95	0.089	0.427	0.593	0.320	0.839	-0.0031 ± 0.0549 ± 0.0016	-0.0031 ± 0.0549 ± 0.0016
		0.40 – 0.57	2.05	0.088	0.450	0.594	0.481	0.817	-0.0974 ± 0.0818 ± 0.0208	-0.0974 ± 0.0818 ± 0.0208
		0.57 – 2.00	2.24	0.088	0.494	0.598	0.781	0.772	0.0571 ± 0.0593 ± 0.0224	0.0571 ± 0.0593 ± 0.0224
0.107 – 0.157	0.20 – 0.34	0.00 – 0.24	3.97	0.128	0.600	0.295	0.156	0.677	-0.1005 ± 0.0795 ± 0.0083	-0.1005 ± 0.0795 ± 0.0083
		0.24 – 0.40	4.13	0.129	0.622	0.288	0.321	0.648	-0.1417 ± 0.0889 ± 0.0039	-0.1417 ± 0.0889 ± 0.0039
		0.40 – 0.57	4.27	0.128	0.644	0.283	0.481	0.617	-0.0118 ± 0.0657 ± 0.0042	-0.0118 ± 0.0657 ± 0.0042
		0.57 – 2.00	4.24	0.127	0.646	0.288	0.719	0.613	-0.0035 ± 0.0731 ± 0.0082	-0.0035 ± 0.0731 ± 0.0082
	0.34 – 0.43	0.00 – 0.24	3.38	0.130	0.504	0.387	0.152	0.780	-0.0891 ± 0.0510 ± 0.0062	-0.0891 ± 0.0510 ± 0.0062
		0.24 – 0.40	3.48	0.129	0.523	0.388	0.316	0.759	-0.0581 ± 0.0639 ± 0.0129	-0.0581 ± 0.0639 ± 0.0129
		0.40 – 0.57	3.69	0.128	0.555	0.386	0.477	0.722	-0.0396 ± 0.0678 ± 0.0023	-0.0396 ± 0.0678 ± 0.0023
		0.57 – 2.00	3.71	0.127	0.563	0.385	0.754	0.712	-0.0851 ± 0.0732 ± 0.0053	-0.0851 ± 0.0732 ± 0.0053
	0.43 – 0.52	0.00 – 0.24	3.06	0.129	0.457	0.474	0.156	0.820	0.0162 ± 0.0485 ± 0.0108	0.0162 ± 0.0485 ± 0.0108
		0.24 – 0.40	3.14	0.130	0.469	0.475	0.317	0.807	-0.0985 ± 0.0536 ± 0.0033	-0.0985 ± 0.0536 ± 0.0033
		0.40 – 0.57	3.29	0.129	0.492	0.472	0.478	0.784	0.0577 ± 0.0733 ± 0.0096	0.0577 ± 0.0733 ± 0.0096
		0.57 – 2.00	3.45	0.128	0.524	0.473	0.771	0.747	-0.0201 ± 0.0716 ± 0.0140	-0.0201 ± 0.0716 ± 0.0140
	0.52 – 0.70	0.00 – 0.24	2.75	0.129	0.413	0.594	0.154	0.852	0.0307 ± 0.0497 ± 0.0074	0.0307 ± 0.0497 ± 0.0074
		0.24 – 0.40	2.77	0.129	0.415	0.594	0.320	0.848	0.0323 ± 0.0461 ± 0.0039	0.0323 ± 0.0461 ± 0.0039
		0.40 – 0.57	2.85	0.130	0.425	0.602	0.479	0.840	-0.0385 ± 0.0594 ± 0.0095	-0.0385 ± 0.0594 ± 0.0095
		0.57 – 2.00	3.17	0.129	0.476	0.602	0.769	0.788	0.0173 ± 0.0608 ± 0.0029	0.0173 ± 0.0608 ± 0.0029
0.157 – 0.600	0.20 – 0.34	0.00 – 0.24	6.65	0.229	0.566	0.301	0.155	0.717	0.0106 ± 0.0541 ± 0.0208	0.0106 ± 0.0541 ± 0.0208
		0.24 – 0.40	6.49	0.219	0.579	0.298	0.317	0.703	-0.2032 ± 0.0657 ± 0.0177	-0.2032 ± 0.0657 ± 0.0177
		0.40 – 0.57	6.54	0.211	0.608	0.290	0.476	0.664	0.1205 ± 0.0721 ± 0.0009	0.1205 ± 0.0721 ± 0.0009
		0.57 – 2.00	6.59	0.216	0.597	0.292	0.719	0.678	-0.1055 ± 0.0982 ± 0.0162	-0.1055 ± 0.0982 ± 0.0162
	0.34 – 0.43	0.00 – 0.24	5.84	0.231	0.492	0.386	0.154	0.793	0.0457 ± 0.0384 ± 0.0183	0.0457 ± 0.0384 ± 0.0183
		0.24 – 0.40	5.96	0.233	0.499	0.387	0.315	0.786	-0.0385 ± 0.0423 ± 0.0162	-0.0385 ± 0.0423 ± 0.0162
		0.40 – 0.57	5.97	0.230	0.509	0.389	0.473	0.774	0.0286 ± 0.0593 ± 0.0088	0.0286 ± 0.0593 ± 0.0088
		0.57 – 2.00	6.10	0.235	0.511	0.386	0.764	0.771	0.0064 ± 0.0811 ± 0.0019	0.0064 ± 0.0811 ± 0.0019
	0.43 – 0.52	0.00 – 0.24	5.22	0.228	0.444	0.474	0.153	0.833	-0.0209 ± 0.0376 ± 0.0064	-0.0209 ± 0.0376 ± 0.0064
		0.24 – 0.40	5.38	0.234	0.450	0.473	0.316	0.826	-0.0848 ± 0.0405 ± 0.0013	-0.0848 ± 0.0405 ± 0.0013
		0.40 – 0.57	5.47	0.234	0.458	0.476	0.476	0.818	0.0398 ± 0.0559 ± 0.0079	0.0398 ± 0.0559 ± 0.0079
		0.57 – 2.00	5.60	0.237	0.467	0.476	0.756	0.805	0.0223 ± 0.0743 ± 0.0292	0.0223 ± 0.0743 ± 0.0292
	0.52 – 0.70	0.00 – 0.24	4.95	0.223	0.426	0.593	0.156	0.844	0.1134 ± 0.0387 ± 0.0036	0.1134 ± 0.0387 ± 0.0036
		0.24 – 0.40	4.89	0.229	0.411	0.594	0.319	0.855	-0.0393 ± 0.0399 ± 0.0060	-0.0393 ± 0.0399 ± 0.0060
		0.40 – 0.57	4.88	0.231	0.411	0.599	0.479	0.853	-0.0023 ± 0.0497 ± 0.0058	-0.0023 ± 0.0497 ± 0.0058
		0.57 – 2.00	5.07	0.233	0.427	0.604	0.749	0.837	0.0920 ± 0.0594 ± 0.0098	0.0920 ± 0.0594 ± 0.0098

Table 73. Three-dimensionally binned SFA and CSA amplitudes of the $\sin(\phi_S)$ modulation for p as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

5.7 $\cos(2\phi - \phi_S)$ modulation

Kinematic bin		Average kinematics						π^+	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(2\phi - \phi_S)/\sqrt{2\epsilon(1-\epsilon)} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(2\phi - \phi_S) \rangle_{\mathrm{L}\perp}$
x	0.023 – 0.046	1.29	0.036	0.702	0.336	0.486	0.526	-0.0424 ± 0.0276 ± 0.0045	-0.0256 ± 0.0182 ± 0.0039
	0.046 – 0.067	1.64	0.056	0.567	0.356	0.408	0.700	-0.0267 ± 0.0272 ± 0.0076	-0.0142 ± 0.0160 ± 0.0056
	0.067 – 0.082	1.98	0.074	0.516	0.366	0.375	0.752	0.0549 ± 0.0379 ± 0.0079	0.0312 ± 0.0210 ± 0.0049
	0.082 – 0.105	2.34	0.093	0.489	0.374	0.358	0.778	-0.0518 ± 0.0367 ± 0.0088	-0.0164 ± 0.0197 ± 0.0044
	0.082 – 0.105	2.34	0.093	0.489	0.374	0.358	0.778	-0.0518 ± 0.0367 ± 0.0088	-0.0164 ± 0.0197 ± 0.0044
	0.105 – 0.134	2.87	0.118	0.469	0.379	0.348	0.796	0.0336 ± 0.0409 ± 0.0130	0.0119 ± 0.0218 ± 0.0056
	0.134 – 0.186	3.69	0.157	0.456	0.379	0.342	0.811	0.0272 ± 0.0428 ± 0.0143	-0.0072 ± 0.0228 ± 0.0046
	0.186 – 0.600	5.71	0.254	0.437	0.375	0.343	0.832	-0.0373 ± 0.0478 ± 0.0195	-0.0161 ± 0.0259 ± 0.0046
z	0.200 – 0.260	2.44	0.087	0.594	0.229	0.344	0.661	0.0024 ± 0.0244 ± 0.0117	0.0018 ± 0.0149 ± 0.0079
	0.260 – 0.320	2.46	0.094	0.556	0.289	0.371	0.702	-0.0460 ± 0.0284 ± 0.0135	-0.0267 ± 0.0164 ± 0.0085
	0.320 – 0.380	2.45	0.098	0.533	0.349	0.394	0.725	0.0119 ± 0.0333 ± 0.0152	0.0071 ± 0.0186 ± 0.0093
	0.380 – 0.450	2.45	0.100	0.520	0.413	0.418	0.740	-0.0467 ± 0.0369 ± 0.0168	-0.0272 ± 0.0202 ± 0.0096
	0.450 – 0.520	2.44	0.101	0.508	0.483	0.441	0.753	-0.0138 ± 0.0446 ± 0.0155	-0.0043 ± 0.0237 ± 0.0089
	0.450 – 0.520	2.44	0.101	0.508	0.483	0.441	0.753	-0.0138 ± 0.0446 ± 0.0155	-0.0043 ± 0.0237 ± 0.0089
	0.520 – 0.600	2.43	0.102	0.499	0.558	0.460	0.763	0.0401 ± 0.0505 ± 0.0198	0.0245 ± 0.0264 ± 0.0112
	0.600 – 0.700	2.41	0.104	0.481	0.647	0.466	0.785	-0.0219 ± 0.0557 ± 0.0184	-0.0122 ± 0.0285 ± 0.0095
	0.700 – 0.760	2.41	0.107	0.457	0.729	0.453	0.813	-0.0886 ± 0.0855 ± 0.0191	-0.0414 ± 0.0428 ± 0.0094
	0.760 – 0.840	2.35	0.108	0.434	0.798	0.433	0.837	0.1613 ± 0.0889 ± 0.0229	0.0662 ± 0.0433 ± 0.0095
	0.840 – 1.200	2.31	0.116	0.394	0.916	0.376	0.872	-0.1312 ± 0.0850 ± 0.0145	-0.0545 ± 0.0392 ± 0.0061
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.56	0.110	0.460	0.341	0.110	0.813	-0.0488 ± 0.0362 ± 0.0148	-0.0293 ± 0.0186 ± 0.0071
	0.170 – 0.250	2.56	0.108	0.489	0.350	0.211	0.779	0.0406 ± 0.0391 ± 0.0184	0.0232 ± 0.0200 ± 0.0094
	0.250 – 0.310	2.52	0.103	0.514	0.354	0.280	0.750	-0.0021 ± 0.0442 ± 0.0178	0.0026 ± 0.0230 ± 0.0096
	0.310 – 0.380	2.46	0.097	0.540	0.355	0.345	0.721	-0.0476 ± 0.0383 ± 0.0120	-0.0255 ± 0.0213 ± 0.0082
	0.310 – 0.380	2.46	0.097	0.540	0.355	0.345	0.721	-0.0476 ± 0.0383 ± 0.0120	-0.0255 ± 0.0213 ± 0.0082
	0.380 – 0.520	2.39	0.090	0.570	0.356	0.446	0.686	-0.0213 ± 0.0273 ± 0.0066	-0.0122 ± 0.0161 ± 0.0051
	0.520 – 0.690	2.34	0.084	0.601	0.373	0.594	0.648	-0.0553 ± 0.0315 ± 0.0066	-0.0341 ± 0.0192 ± 0.0047
	0.690 – 2.000	2.30	0.076	0.642	0.429	0.849	0.597	0.0666 ± 0.0387 ± 0.0080	0.0471 ± 0.0245 ± 0.0048

Table 74. One-dimensionally binned SFA and CSA amplitudes of the $\cos(2\phi - \phi_S)$ modulation for π^+ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin		Average kinematics						π^0	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(2\phi - \phi_S)/\sqrt{2\epsilon(1-\epsilon)} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(2\phi - \phi_S) \rangle_{\mathrm{L}\perp}$
x	0.023 – 0.046	1.30	0.036	0.712	0.325	0.492	0.512	-0.0854 ± 0.0795 ± 0.0282	-0.0503 ± 0.0524 ± 0.0139
	0.046 – 0.067	1.72	0.056	0.597	0.352	0.406	0.665	0.0330 ± 0.0760 ± 0.0283	0.0232 ± 0.0454 ± 0.0142
	0.067 – 0.082	2.14	0.074	0.558	0.366	0.374	0.708	-0.0600 ± 0.1035 ± 0.0280	-0.0606 ± 0.0595 ± 0.0138
	0.082 – 0.105	2.58	0.093	0.538	0.372	0.353	0.731	0.2168 ± 0.1016 ± 0.0297	0.1102 ± 0.0567 ± 0.0147
	0.082 – 0.105	2.58	0.093	0.538	0.372	0.353	0.731	0.2168 ± 0.1016 ± 0.0297	0.1102 ± 0.0567 ± 0.0147
	0.105 – 0.134	3.19	0.118	0.522	0.378	0.338	0.749	0.0548 ± 0.1204 ± 0.0287	0.0464 ± 0.0657 ± 0.0139
	0.134 – 0.186	4.10	0.156	0.507	0.380	0.323	0.766	0.0317 ± 0.1194 ± 0.0309	0.0071 ± 0.0663 ± 0.0148
	0.186 – 0.600	6.14	0.249	0.479	0.386	0.326	0.797	-0.1804 ± 0.1334 ± 0.0302	-0.0952 ± 0.0750 ± 0.0139
z	0.200 – 0.260	2.45	0.078	0.648	0.229	0.337	0.598	0.0082 ± 0.0943 ± 0.0090	0.0008 ± 0.0611 ± 0.0043
	0.260 – 0.320	2.49	0.085	0.609	0.289	0.372	0.645	-0.0040 ± 0.0855 ± 0.0132	-0.0104 ± 0.0530 ± 0.0074
	0.320 – 0.380	2.52	0.090	0.581	0.348	0.401	0.679	-0.1373 ± 0.0890 ± 0.0125	-0.0654 ± 0.0534 ± 0.0063
	0.380 – 0.450	2.53	0.095	0.558	0.413	0.427	0.705	0.0331 ± 0.0877 ± 0.0096	0.0288 ± 0.0500 ± 0.0047
	0.450 – 0.520	2.55	0.099	0.537	0.483	0.450	0.728	0.0370 ± 0.0978 ± 0.0105	0.0078 ± 0.0536 ± 0.0042
	0.450 – 0.520	2.55	0.099	0.537	0.483	0.450	0.728	0.0370 ± 0.0978 ± 0.0105	0.0078 ± 0.0536 ± 0.0042
	0.520 – 0.600	2.57	0.102	0.517	0.557	0.469	0.750	0.1344 ± 0.1073 ± 0.0111	0.0798 ± 0.0567 ± 0.0049
	0.600 – 0.700	2.59	0.106	0.496	0.645	0.483	0.774	-0.0205 ± 0.1205 ± 0.0116	-0.0188 ± 0.0616 ± 0.0056
	0.700 – 0.760	2.61	0.112	0.472	0.728	0.494	0.799	-0.2458 ± 0.1895 ± 0.0072	-0.0832 ± 0.0943 ± 0.0014
	0.760 – 0.840	2.66	0.116	0.457	0.796	0.488	0.815	0.3688 ± 0.2127 ± 0.0223	0.1554 ± 0.1043 ± 0.0099
	0.840 – 1.200	2.56	0.121	0.418	0.908	0.478	0.849	0.0682 ± 0.2539 ± 0.0135	0.0641 ± 0.1179 ± 0.0061
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.82	0.114	0.481	0.338	0.111	0.799	-0.1982 ± 0.1302 ± 0.0607	-0.0954 ± 0.0668 ± 0.0314
	0.170 – 0.250	2.69	0.103	0.529	0.340	0.211	0.745	0.0121 ± 0.1267 ± 0.0607	0.0189 ± 0.0648 ± 0.0312
	0.250 – 0.310	2.59	0.095	0.563	0.343	0.280	0.705	0.1714 ± 0.1400 ± 0.0616	0.0950 ± 0.0718 ± 0.0313
	0.310 – 0.380	2.49	0.088	0.591	0.347	0.345	0.668	0.0362 ± 0.1310 ± 0.0613	0.0055 ± 0.0674 ± 0.0313
	0.310 – 0.380	2.49	0.088	0.591	0.347	0.345	0.668	0.0362 ± 0.1310 ± 0.0613	0.0055 ± 0.0674 ± 0.0313
	0.380 – 0.520	2.39	0.081	0.624	0.353	0.446	0.625	0.0033 ± 0.0816 ± 0.0603	-0.0020 ± 0.0476 ± 0.0313
	0.520 – 0.690	2.30	0.074	0.652	0.371	0.595	0.587	-0.0378 ± 0.0776 ± 0.0599	-0.0194 ± 0.0480 ± 0.0308
	0.690 – 2.000	2.27	0.071	0.675	0.428	0.849	0.554	-0.0024 ± 0.0812 ± 0.0598	-0.0002 ± 0.0518 ± 0.0307

Table 75. One-dimensionally binned SFA and CSA amplitudes of the $\cos(2\phi - \phi_S)$ modulation for π^0 as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin		Average kinematics						π^-	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(2\phi - \phi_S)/\sqrt{2\epsilon(1-\epsilon)} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(2\phi - \phi_S) \rangle_{\mathrm{L}\perp}$
x	0.023 – 0.046	1.29	0.036	0.704	0.330	0.481	0.524	-0.0110 ± 0.0311 ± 0.0026	-0.0072 ± 0.0205 ± 0.0023
	0.046 – 0.067	1.64	0.056	0.568	0.350	0.402	0.699	-0.0286 ± 0.0312 ± 0.0034	-0.0202 ± 0.0185 ± 0.0024
	0.067 – 0.082	1.98	0.074	0.515	0.359	0.369	0.752	0.0705 ± 0.0443 ± 0.0067	0.0374 ± 0.0245 ± 0.0044
	0.082 – 0.105	2.33	0.093	0.487	0.366	0.354	0.779	-0.0419 ± 0.0432 ± 0.0071	-0.0179 ± 0.0233 ± 0.0040
	0.082 – 0.105	2.33	0.093	0.487	0.366	0.354	0.779	-0.0419 ± 0.0432 ± 0.0071	-0.0179 ± 0.0233 ± 0.0040
	0.105 – 0.134	2.86	0.118	0.468	0.369	0.348	0.797	0.0170 ± 0.0490 ± 0.0110	0.0058 ± 0.0261 ± 0.0063
	0.134 – 0.186	3.66	0.156	0.454	0.369	0.342	0.813	0.0368 ± 0.0520 ± 0.0170	0.0195 ± 0.0279 ± 0.0080
	0.186 – 0.600	5.66	0.253	0.434	0.364	0.349	0.835	0.0040 ± 0.0604 ± 0.0221	-0.0049 ± 0.0328 ± 0.0087
z	0.200 – 0.260	2.39	0.084	0.598	0.229	0.350	0.656	-0.0047 ± 0.0277 ± 0.0024	0.0016 ± 0.0169 ± 0.0019
	0.260 – 0.320	2.38	0.091	0.559	0.289	0.379	0.698	-0.0048 ± 0.0326 ± 0.0033	-0.0035 ± 0.0189 ± 0.0028
	0.320 – 0.380	2.36	0.094	0.536	0.348	0.403	0.721	-0.0212 ± 0.0387 ± 0.0051	-0.0123 ± 0.0218 ± 0.0040
	0.380 – 0.450	2.37	0.097	0.521	0.413	0.422	0.738	0.0338 ± 0.0443 ± 0.0095	0.0128 ± 0.0242 ± 0.0066
	0.450 – 0.520	2.35	0.098	0.509	0.483	0.437	0.751	0.0171 ± 0.0539 ± 0.0053	-0.0076 ± 0.0289 ± 0.0042
	0.450 – 0.520	2.35	0.098	0.509	0.483	0.437	0.751	0.0171 ± 0.0539 ± 0.0053	-0.0076 ± 0.0289 ± 0.0042
	0.520 – 0.600	2.31	0.098	0.498	0.558	0.449	0.764	-0.0412 ± 0.0623 ± 0.0111	-0.0163 ± 0.0325 ± 0.0067
	0.600 – 0.700	2.27	0.099	0.479	0.646	0.438	0.787	0.0301 ± 0.0703 ± 0.0134	0.0111 ± 0.0358 ± 0.0069
	0.700 – 0.760	2.19	0.099	0.452	0.729	0.416	0.818	0.0987 ± 0.1121 ± 0.0166	0.0488 ± 0.0554 ± 0.0073
	0.760 – 0.840	2.15	0.101	0.432	0.798	0.389	0.839	-0.0112 ± 0.1126 ± 0.0184	-0.0033 ± 0.0547 ± 0.0075
	0.840 – 1.200	2.08	0.104	0.399	0.906	0.338	0.868	-0.0597 ± 0.1130 ± 0.0246	-0.0009 ± 0.0527 ± 0.0093
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.48	0.107	0.462	0.337	0.110	0.811	-0.0584 ± 0.0426 ± 0.0140	-0.0307 ± 0.0219 ± 0.0067
	0.170 – 0.250	2.47	0.103	0.492	0.345	0.211	0.775	0.0005 ± 0.0461 ± 0.0124	-0.0111 ± 0.0235 ± 0.0077
	0.250 – 0.310	2.43	0.098	0.520	0.350	0.280	0.743	0.0791 ± 0.0517 ± 0.0106	0.0415 ± 0.0270 ± 0.0076
	0.310 – 0.380	2.36	0.092	0.546	0.349	0.345	0.714	0.0152 ± 0.0446 ± 0.0062	0.0084 ± 0.0250 ± 0.0054
	0.310 – 0.380	2.36	0.092	0.546	0.349	0.345	0.714	0.0152 ± 0.0446 ± 0.0062	0.0084 ± 0.0250 ± 0.0054
	0.380 – 0.520	2.30	0.086	0.576	0.347	0.446	0.678	0.0055 ± 0.0320 ± 0.0070	0.0107 ± 0.0190 ± 0.0054
	0.520 – 0.690	2.28	0.081	0.606	0.359	0.594	0.640	-0.0240 ± 0.0370 ± 0.0068	-0.0223 ± 0.0228 ± 0.0060
	0.690 – 2.000	2.26	0.076	0.643	0.409	0.846	0.594	0.0030 ± 0.0465 ± 0.0116	-0.0006 ± 0.0297 ± 0.0101

Table 76. One-dimensionally binned SFA and CSA amplitudes of the $\cos(2\phi - \phi_S)$ modulation for π^- as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin		Average kinematics						K^+	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(2\phi - \phi_S)/\sqrt{2\epsilon(1-\epsilon)} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(2\phi - \phi_S) \rangle_{\mathrm{L}\perp}$
x	0.023 – 0.046	1.29	0.036	0.704	0.363	0.527	0.524	0.0383 ± 0.0732 ± 0.0008	0.0234 ± 0.0482 ± 0.0002
	0.046 – 0.067	1.65	0.056	0.571	0.384	0.436	0.696	0.0140 ± 0.0715 ± 0.0126	0.0019 ± 0.0424 ± 0.0088
	0.067 – 0.082	2.01	0.074	0.524	0.392	0.398	0.743	-0.0104 ± 0.0998 ± 0.0120	-0.0368 ± 0.0556 ± 0.0076
	0.082 – 0.105	2.39	0.093	0.498	0.401	0.378	0.769	0.0464 ± 0.0940 ± 0.0222	0.0215 ± 0.0511 ± 0.0121
	0.082 – 0.105	2.39	0.093	0.498	0.401	0.378	0.769	0.0464 ± 0.0940 ± 0.0222	0.0215 ± 0.0511 ± 0.0121
	0.105 – 0.134	2.93	0.118	0.479	0.404	0.366	0.788	-0.1196 ± 0.1056 ± 0.0200	-0.0229 ± 0.0563 ± 0.0100
	0.134 – 0.186	3.79	0.157	0.468	0.408	0.358	0.801	-0.0323 ± 0.1066 ± 0.0216	-0.0273 ± 0.0578 ± 0.0093
	0.186 – 0.600	5.86	0.252	0.451	0.410	0.357	0.822	0.3000 ± 0.1153 ± 0.0643	0.1876 ± 0.0632 ± 0.0289
z	0.200 – 0.260	2.46	0.085	0.603	0.228	0.351	0.652	-0.0006 ± 0.0757 ± 0.0014	-0.0042 ± 0.0470 ± 0.0004
	0.260 – 0.320	2.49	0.092	0.569	0.287	0.378	0.688	-0.0132 ± 0.0774 ± 0.0065	-0.0115 ± 0.0461 ± 0.0060
	0.320 – 0.380	2.53	0.097	0.548	0.347	0.403	0.711	0.1260 ± 0.0813 ± 0.0212	0.0556 ± 0.0468 ± 0.0157
	0.380 – 0.450	2.56	0.101	0.532	0.412	0.425	0.730	-0.0889 ± 0.0887 ± 0.0241	-0.0552 ± 0.0489 ± 0.0185
	0.450 – 0.520	2.55	0.102	0.522	0.482	0.458	0.739	0.0691 ± 0.1027 ± 0.0377	0.0319 ± 0.0547 ± 0.0260
	0.450 – 0.520	2.55	0.102	0.522	0.482	0.458	0.739	0.0691 ± 0.1027 ± 0.0377	0.0319 ± 0.0547 ± 0.0260
	0.520 – 0.600	2.54	0.104	0.515	0.556	0.484	0.748	0.0045 ± 0.1111 ± 0.0442	0.0122 ± 0.0579 ± 0.0305
	0.600 – 0.700	2.61	0.108	0.500	0.645	0.506	0.766	0.1753 ± 0.1218 ± 0.0539	0.0836 ± 0.0633 ± 0.0325
	0.700 – 0.760	2.63	0.112	0.474	0.727	0.506	0.797	-0.0093 ± 0.1883 ± 0.0664	0.0145 ± 0.0967 ± 0.0366
	0.760 – 0.840	2.62	0.116	0.448	0.796	0.501	0.825	0.3918 ± 0.1906 ± 0.0677	0.1953 ± 0.0946 ± 0.0352
	0.840 – 1.200	2.47	0.119	0.411	0.903	0.469	0.858	-0.5830 ± 0.2162 ± 0.0675	-0.2916 ± 0.1017 ± 0.0370
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.68	0.113	0.468	0.362	0.111	0.807	0.1199 ± 0.0922 ± 0.0194	0.0650 ± 0.0485 ± 0.0092
	0.170 – 0.250	2.66	0.109	0.495	0.372	0.211	0.775	-0.1234 ± 0.1026 ± 0.0005	-0.0753 ± 0.0538 ± 0.0078
	0.250 – 0.310	2.66	0.106	0.517	0.377	0.280	0.750	0.0827 ± 0.1187 ± 0.0037	0.0683 ± 0.0625 ± 0.0109
	0.310 – 0.380	2.56	0.099	0.540	0.381	0.345	0.723	0.0758 ± 0.1051 ± 0.0317	0.0356 ± 0.0583 ± 0.0207
	0.310 – 0.380	2.56	0.099	0.540	0.381	0.345	0.723	0.0758 ± 0.1051 ± 0.0317	0.0356 ± 0.0583 ± 0.0207
	0.380 – 0.520	2.49	0.093	0.565	0.387	0.447	0.692	-0.0173 ± 0.0741 ± 0.0526	-0.0130 ± 0.0429 ± 0.0320
	0.520 – 0.690	2.41	0.087	0.593	0.402	0.597	0.658	-0.0446 ± 0.0799 ± 0.0480	-0.0282 ± 0.0481 ± 0.0335
	0.690 – 2.000	2.29	0.076	0.642	0.451	0.867	0.597	0.0313 ± 0.0863 ± 0.0179	-0.0007 ± 0.0540 ± 0.0180

Table 77. One-dimensionally binned SFA and CSA amplitudes of the $\cos(2\phi - \phi_S)$ modulation for K^+ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin		Average kinematics						K^-	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(2\phi - \phi_S)/\sqrt{2\epsilon(1-\epsilon)} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(2\phi - \phi_S) \rangle_{\mathrm{L}\perp}$
x	0.023 – 0.046	1.30	0.036	0.711	0.338	0.503	0.513	-0.0429 ± 0.0984 ± 0.0213	-0.0212 ± 0.0646 ± 0.0146
	0.046 – 0.067	1.67	0.056	0.578	0.355	0.417	0.687	0.0512 ± 0.1025 ± 0.0128	0.0267 ± 0.0616 ± 0.0059
	0.067 – 0.082	2.04	0.074	0.533	0.361	0.381	0.734	0.1631 ± 0.1462 ± 0.0008	0.0779 ± 0.0832 ± 0.0056
	0.082 – 0.105	2.44	0.093	0.510	0.367	0.367	0.758	0.0775 ± 0.1416 ± 0.0069	0.0833 ± 0.0793 ± 0.0108
	0.082 – 0.105	2.44	0.093	0.510	0.367	0.367	0.758	0.0775 ± 0.1416 ± 0.0069	0.0833 ± 0.0793 ± 0.0108
	0.105 – 0.134	3.01	0.118	0.493	0.366	0.362	0.775	-0.2207 ± 0.1657 ± 0.0014	-0.1335 ± 0.0920 ± 0.0102
	0.134 – 0.186	3.89	0.157	0.480	0.365	0.356	0.790	-0.2341 ± 0.1735 ± 0.0109	-0.1127 ± 0.0963 ± 0.0164
	0.186 – 0.600	5.82	0.251	0.451	0.363	0.364	0.821	-0.1564 ± 0.2094 ± 0.0361	-0.1243 ± 0.1156 ± 0.0246
z	0.200 – 0.260	2.41	0.082	0.616	0.227	0.362	0.636	-0.0298 ± 0.0975 ± 0.0286	-0.0078 ± 0.0612 ± 0.0185
	0.260 – 0.320	2.41	0.087	0.582	0.287	0.389	0.673	0.0572 ± 0.1055 ± 0.0262	0.0316 ± 0.0633 ± 0.0125
	0.320 – 0.380	2.40	0.091	0.557	0.347	0.419	0.701	-0.1209 ± 0.1218 ± 0.0248	-0.0832 ± 0.0706 ± 0.0070
	0.380 – 0.450	2.37	0.092	0.542	0.411	0.440	0.718	-0.0534 ± 0.1383 ± 0.0166	-0.0305 ± 0.0776 ± 0.0007
	0.450 – 0.520	2.29	0.091	0.534	0.482	0.460	0.726	0.1335 ± 0.1696 ± 0.0022	0.1040 ± 0.0921 ± 0.0104
	0.450 – 0.520	2.29	0.091	0.534	0.482	0.460	0.726	0.1335 ± 0.1696 ± 0.0022	0.1040 ± 0.0921 ± 0.0104
	0.520 – 0.600	2.34	0.093	0.531	0.556	0.465	0.729	-0.1129 ± 0.1952 ± 0.0145	-0.0375 ± 0.1049 ± 0.0192
	0.600 – 0.700	2.33	0.094	0.520	0.642	0.493	0.744	-0.3045 ± 0.2445 ± 0.0344	-0.1789 ± 0.1305 ± 0.0296
	0.700 – 0.760	2.28	0.093	0.506	0.726	0.500	0.766	-0.0461 ± 0.4850 ± 0.0404	-0.0253 ± 0.2488 ± 0.0292
	0.760 – 0.840	2.30	0.096	0.482	0.793	0.464	0.795	0.2599 ± 0.6505 ± 0.0393	0.0100 ± 0.3507 ± 0.0271
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.47	0.103	0.477	0.337	0.111	0.797	0.1793 ± 0.1420 ± 0.0062	0.1009 ± 0.0753 ± 0.0067
	0.170 – 0.250	2.48	0.100	0.513	0.346	0.210	0.756	0.1971 ± 0.1561 ± 0.0127	0.0692 ± 0.0821 ± 0.0023
	0.250 – 0.310	2.48	0.096	0.540	0.346	0.280	0.724	-0.0612 ± 0.1831 ± 0.0190	-0.0053 ± 0.0981 ± 0.0073
	0.310 – 0.380	2.39	0.089	0.566	0.351	0.345	0.692	-0.3132 ± 0.1577 ± 0.0276	-0.1840 ± 0.0908 ± 0.0157
	0.310 – 0.380	2.39	0.089	0.566	0.351	0.345	0.692	-0.3132 ± 0.1577 ± 0.0276	-0.1840 ± 0.0908 ± 0.0157
	0.380 – 0.520	2.32	0.084	0.592	0.348	0.447	0.661	-0.0829 ± 0.1075 ± 0.0168	-0.0644 ± 0.0649 ± 0.0138
	0.520 – 0.690	2.31	0.080	0.620	0.358	0.597	0.625	0.1114 ± 0.1186 ± 0.0149	0.0772 ± 0.0738 ± 0.0162
	0.690 – 2.000	2.26	0.073	0.661	0.409	0.856	0.572	-0.0678 ± 0.1326 ± 0.0146	-0.0400 ± 0.0849 ± 0.0240

Table 78. One-dimensionally binned SFA and CSA amplitudes of the $\cos(2\phi - \phi_S)$ modulation for K^- as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin		Average kinematics						p	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(2\phi - \phi_S)/\sqrt{2\epsilon(1-\epsilon)} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(2\phi - \phi_S) \rangle_{\mathrm{L}\perp}$
	0.023 – 0.040	1.24	0.033	0.738	0.354	0.550	0.475	-0.0604 ± 0.1001 ± 0.0061	-0.0437 ± 0.0681 ± 0.0024
	0.040 – 0.057	1.54	0.048	0.619	0.395	0.490	0.640	0.0590 ± 0.0851 ± 0.0001	0.0308 ± 0.0532 ± 0.0006
	0.057 – 0.075	1.90	0.066	0.561	0.424	0.447	0.706	-0.0534 ± 0.0978 ± 0.0077	-0.0332 ± 0.0572 ± 0.0037
x	0.075 – 0.098	2.36	0.086	0.533	0.439	0.430	0.735	0.1098 ± 0.1062 ± 0.0044	0.0413 ± 0.0598 ± 0.0038
	0.075 – 0.098	2.36	0.086	0.533	0.439	0.430	0.735	0.1098 ± 0.1062 ± 0.0044	0.0413 ± 0.0598 ± 0.0038
	0.098 – 0.136	3.06	0.115	0.514	0.449	0.406	0.757	-0.0425 ± 0.1028 ± 0.0151	-0.0365 ± 0.0575 ± 0.0046
	0.136 – 0.185	4.04	0.158	0.496	0.457	0.390	0.777	-0.0385 ± 0.1250 ± 0.0162	-0.0123 ± 0.0697 ± 0.0030
	0.185 – 0.600	6.13	0.257	0.464	0.471	0.383	0.811	-0.0155 ± 0.1312 ± 0.0378	-0.0170 ± 0.0716 ± 0.0103
	0.200 – 0.270	2.30	0.062	0.739	0.239	0.477	0.477	-0.1177 ± 0.1022 ± 0.0197	-0.0839 ± 0.0709 ± 0.0132
	0.270 – 0.340	2.57	0.081	0.643	0.306	0.456	0.613	0.0242 ± 0.0819 ± 0.0258	0.0079 ± 0.0532 ± 0.0160
	0.340 – 0.410	2.64	0.093	0.583	0.375	0.443	0.683	-0.0045 ± 0.0847 ± 0.0095	0.0020 ± 0.0507 ± 0.0053
	0.410 – 0.470	2.66	0.102	0.544	0.439	0.446	0.723	-0.1208 ± 0.1017 ± 0.0174	-0.0729 ± 0.0568 ± 0.0080
z	0.470 – 0.530	2.68	0.109	0.512	0.499	0.435	0.757	0.1228 ± 0.1177 ± 0.0246	0.0486 ± 0.0625 ± 0.0098
	0.470 – 0.530	2.68	0.109	0.512	0.499	0.435	0.757	0.1228 ± 0.1177 ± 0.0246	0.0486 ± 0.0625 ± 0.0098
	0.530 – 0.610	2.64	0.113	0.485	0.567	0.452	0.781	-0.0774 ± 0.1231 ± 0.0310	-0.0404 ± 0.0630 ± 0.0102
	0.610 – 0.700	2.63	0.119	0.455	0.650	0.463	0.810	0.1231 ± 0.1571 ± 0.0448	0.0193 ± 0.0776 ± 0.0174
	0.700 – 0.780	2.57	0.123	0.423	0.735	0.477	0.841	-0.2370 ± 0.2430 ± 0.0459	-0.0607 ± 0.1164 ± 0.0160
	0.780 – 0.880	2.54	0.130	0.389	0.821	0.490	0.872	0.0277 ± 0.3589 ± 0.0371	0.0047 ± 0.1657 ± 0.0118
	0.880 – 1.200	2.45	0.136	0.353	0.938	0.505	0.900	0.4240 ± 0.6551 ± 0.1137	0.2994 ± 0.2817 ± 0.0348
	0.000 – 0.230	2.88	0.113	0.510	0.435	0.150	0.765	0.0251 ± 0.0925 ± 0.0144	0.0131 ± 0.0505 ± 0.0009
	0.230 – 0.340	2.76	0.106	0.543	0.427	0.286	0.723	-0.1014 ± 0.1013 ± 0.0352	-0.0831 ± 0.0544 ± 0.0133
	0.340 – 0.430	2.62	0.097	0.569	0.416	0.385	0.691	0.0571 ± 0.1072 ± 0.0385	0.0119 ± 0.0612 ± 0.0208
$P_{h\perp}$	0.430 – 0.520	2.54	0.091	0.590	0.413	0.474	0.666	0.0711 ± 0.1083 ± 0.0270	0.0320 ± 0.0646 ± 0.0175
	0.430 – 0.520	2.54	0.091	0.590	0.413	0.474	0.666	0.0711 ± 0.1083 ± 0.0270	0.0320 ± 0.0646 ± 0.0175
[GeV]	0.520 – 0.620	2.44	0.085	0.608	0.406	0.568	0.644	-0.0023 ± 0.1073 ± 0.0152	0.0043 ± 0.0660 ± 0.0129
	0.620 – 0.740	2.35	0.080	0.620	0.405	0.676	0.628	0.0643 ± 0.1152 ± 0.0111	0.0462 ± 0.0718 ± 0.0091
	0.740 – 2.000	2.31	0.078	0.633	0.432	0.904	0.609	-0.0953 ± 0.1089 ± 0.0018	-0.0662 ± 0.0689 ± 0.0068

Table 79. One-dimensionally binned SFA and CSA amplitudes of the $\cos(2\phi - \phi_S)$ modulation for p as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin		Average kinematics						$\bar{p}$	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(2\phi - \phi_S)/\sqrt{2\epsilon(1-\epsilon)} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(2\phi - \phi_S) \rangle_{\mathrm{L}\perp}$
	0.023 – 0.040	1.26	0.032	0.759	0.335	0.539	0.442	0.1755 ± 0.1926 ± 0.0348	0.1320 ± 0.1294 ± 0.0202
	0.040 – 0.057	1.65	0.048	0.666	0.360	0.492	0.579	0.0414 ± 0.2005 ± 0.0274	0.0115 ± 0.1305 ± 0.0120
	0.057 – 0.075	2.12	0.065	0.628	0.372	0.472	0.626	0.6228 ± 0.2359 ± 0.0051	0.4165 ± 0.1497 ± 0.0004
x	0.075 – 0.098	2.69	0.085	0.608	0.377	0.450	0.655	-0.1629 ± 0.2839 ± 0.0289	-0.1290 ± 0.1819 ± 0.0174
	0.075 – 0.098	2.69	0.085	0.608	0.377	0.450	0.655	-0.1629 ± 0.2839 ± 0.0289	-0.1290 ± 0.1819 ± 0.0174
	0.098 – 0.136	3.48	0.115	0.588	0.385	0.429	0.678	-0.1921 ± 0.2939 ± 0.0523	-0.1546 ± 0.1837 ± 0.0277
	0.136 – 0.185	4.58	0.158	0.562	0.385	0.399	0.712	0.3812 ± 0.3972 ± 0.0522	0.2951 ± 0.2421 ± 0.0285
	0.185 – 0.600	6.60	0.243	0.531	0.406	0.383	0.748	-0.0790 ± 0.4469 ± 0.0915	-0.0263 ± 0.2629 ± 0.0470
	0.200 – 0.270	2.25	0.060	0.750	0.238	0.471	0.459	-0.1455 ± 0.1944 ± 0.0388	-0.0720 ± 0.1331 ± 0.0287
	0.270 – 0.340	2.48	0.074	0.679	0.304	0.476	0.562	0.0592 ± 0.1746 ± 0.0570	0.0340 ± 0.1152 ± 0.0365
	0.340 – 0.410	2.43	0.079	0.634	0.373	0.482	0.618	0.3704 ± 0.2095 ± 0.0618	0.2439 ± 0.1323 ± 0.0307
	0.410 – 0.470	2.43	0.085	0.595	0.437	0.470	0.665	0.5194 ± 0.3008 ± 0.0372	0.2836 ± 0.1803 ± 0.0076
z	0.470 – 0.530	2.41	0.085	0.583	0.498	0.478	0.678	0.1857 ± 0.3668 ± 0.0143	0.1115 ± 0.2172 ± 0.0304
	0.470 – 0.530	2.41	0.085	0.583	0.498	0.478	0.678	0.1857 ± 0.3668 ± 0.0143	0.1115 ± 0.2172 ± 0.0304
	0.530 – 0.610	2.26	0.083	0.567	0.563	0.492	0.698	0.8199 ± 0.4691 ± 0.0307	0.4100 ± 0.2773 ± 0.0433
	0.610 – 0.700	2.40	0.095	0.527	0.645	0.502	0.745	-0.4728 ± 0.6470 ± 0.1075	-0.2750 ± 0.3469 ± 0.0807
	0.000 – 0.230	2.79	0.097	0.586	0.378	0.151	0.683	-0.0375 ± 0.2712 ± 0.0104	-0.0079 ± 0.1609 ± 0.0039
	0.230 – 0.340	2.53	0.083	0.630	0.364	0.288	0.622	-0.3905 ± 0.3123 ± 0.0192	-0.1999 ± 0.1872 ± 0.0002
	0.340 – 0.430	2.37	0.075	0.652	0.358	0.385	0.592	0.1284 ± 0.2761 ± 0.0832	0.1392 ± 0.1739 ± 0.0413
$P_{h\perp}$	0.430 – 0.520	2.35	0.073	0.667	0.351	0.475	0.572	-0.0890 ± 0.2471 ± 0.0813	-0.0688 ± 0.1598 ± 0.0549
	0.430 – 0.520	2.35	0.073	0.667	0.351	0.475	0.572	-0.0890 ± 0.2471 ± 0.0813	-0.0688 ± 0.1598 ± 0.0549
[GeV]	0.520 – 0.620	2.30	0.070	0.678	0.355	0.569	0.557	-0.0299 ± 0.2488 ± 0.0560	-0.0160 ± 0.1624 ± 0.0432
	0.620 – 0.740	2.21	0.066	0.687	0.355	0.675	0.544	0.1807 ± 0.2616 ± 0.0438	0.1061 ± 0.1720 ± 0.0378
	0.740 – 2.000	2.12	0.062	0.698	0.386	0.886	0.527	0.5199 ± 0.2608 ± 0.0193	0.3468 ± 0.1711 ± 0.0296

Table 80. One-dimensionally binned SFA and CSA amplitudes of the $\cos(2\phi - \phi_S)$ modulation for $\bar{p}$ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin			Average kinematics						π^+	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(2\phi - \phi_S) / \sqrt{2\epsilon(1-\epsilon)} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(2\phi - \phi_S) \rangle_{\mathrm{L}\perp}$
0.023 – 0.072	0.20 – 0.28	0.00 – 0.23	1.46	0.052	0.561	0.236	0.151	0.708	-0.0062 ± 0.0911 ± 0.0011	-0.0062 ± 0.0911 ± 0.0011
		0.23 – 0.36	1.51	0.048	0.632	0.235	0.298	0.619	-0.0369 ± 0.0606 ± 0.0027	-0.0369 ± 0.0606 ± 0.0027
		0.36 – 0.54	1.54	0.046	0.673	0.237	0.443	0.564	-0.0075 ± 0.0495 ± 0.0041	-0.0075 ± 0.0495 ± 0.0041
		0.54 – 2.00	1.59	0.043	0.730	0.242	0.655	0.483	0.0121 ± 0.0712 ± 0.0001	0.0121 ± 0.0712 ± 0.0001
	0.28 – 0.37	0.00 – 0.23	1.43	0.054	0.525	0.320	0.150	0.750	-0.0459 ± 0.1080 ± 0.0055	-0.0459 ± 0.1080 ± 0.0055
		0.23 – 0.36	1.48	0.050	0.595	0.320	0.297	0.665	-0.3009 ± 0.1565 ± 0.0015	-0.3009 ± 0.1565 ± 0.0015
		0.36 – 0.54	1.52	0.047	0.640	0.320	0.449	0.607	-0.0663 ± 0.0635 ± 0.0038	-0.0663 ± 0.0635 ± 0.0038
		0.54 – 2.00	1.56	0.045	0.692	0.323	0.699	0.536	0.0681 ± 0.0631 ± 0.0037	0.0681 ± 0.0631 ± 0.0037
	0.37 – 0.49	0.00 – 0.23	1.40	0.055	0.504	0.422	0.151	0.775	-0.0043 ± 0.1239 ± 0.0056	-0.0043 ± 0.1239 ± 0.0056
		0.23 – 0.36	1.45	0.051	0.563	0.422	0.298	0.705	0.0213 ± 0.1856 ± 0.0024	0.0213 ± 0.1856 ± 0.0024
		0.36 – 0.54	1.49	0.049	0.609	0.423	0.447	0.648	-0.0319 ± 0.1217 ± 0.0011	-0.0319 ± 0.1217 ± 0.0011
		0.54 – 2.00	1.54	0.046	0.668	0.425	0.747	0.569	-0.1134 ± 0.0637 ± 0.0043	-0.1134 ± 0.0637 ± 0.0043
	0.49 – 0.70	0.00 – 0.23	1.38	0.056	0.488	0.579	0.151	0.793	-0.0348 ± 0.1406 ± 0.0003	-0.0348 ± 0.1406 ± 0.0003
		0.23 – 0.36	1.41	0.053	0.529	0.578	0.298	0.745	-0.1092 ± 0.1731 ± 0.0025	-0.1092 ± 0.1731 ± 0.0025
		0.36 – 0.54	1.45	0.051	0.571	0.577	0.448	0.695	-0.2032 ± 0.1866 ± 0.0022	-0.2032 ± 0.1866 ± 0.0022
		0.54 – 2.00	1.51	0.048	0.633	0.577	0.786	0.618	-0.0327 ± 0.0741 ± 0.0109	-0.0327 ± 0.0741 ± 0.0109
0.072 – 0.098	0.20 – 0.28	0.00 – 0.23	2.10	0.084	0.484	0.239	0.140	0.792	0.1432 ± 0.1103 ± 0.0102	0.1432 ± 0.1103 ± 0.0102
		0.23 – 0.36	2.39	0.084	0.550	0.238	0.295	0.721	-0.0273 ± 0.1252 ± 0.0073	-0.0273 ± 0.1252 ± 0.0073
		0.36 – 0.54	2.47	0.084	0.572	0.239	0.441	0.692	0.0379 ± 0.0973 ± 0.0046	0.0379 ± 0.0973 ± 0.0046
		0.54 – 2.00	2.73	0.084	0.633	0.244	0.643	0.620	0.0228 ± 0.1570 ± 0.0045	0.0228 ± 0.1570 ± 0.0045
	0.28 – 0.37	0.00 – 0.23	1.89	0.084	0.434	0.321	0.142	0.834	0.0684 ± 0.1202 ± 0.0110	0.0684 ± 0.1202 ± 0.0110
		0.23 – 0.36	2.14	0.084	0.492	0.322	0.293	0.778	0.2622 ± 0.1970 ± 0.0151	0.2622 ± 0.1970 ± 0.0151
		0.36 – 0.54	2.30	0.084	0.530	0.321	0.444	0.736	-0.0636 ± 0.1206 ± 0.0068	-0.0636 ± 0.1206 ± 0.0068
		0.54 – 2.00	2.51	0.084	0.581	0.325	0.676	0.678	-0.1356 ± 0.1303 ± 0.0114	-0.1356 ± 0.1303 ± 0.0114
	0.37 – 0.49	0.00 – 0.23	1.83	0.085	0.420	0.423	0.146	0.846	-0.0556 ± 0.1399 ± 0.0096	-0.0556 ± 0.1399 ± 0.0096
		0.23 – 0.36	1.99	0.085	0.455	0.424	0.293	0.812	-0.2132 ± 0.1838 ± 0.0010	-0.2132 ± 0.1838 ± 0.0010
		0.36 – 0.54	2.18	0.084	0.502	0.425	0.443	0.766	-0.1289 ± 0.1992 ± 0.0152	-0.1289 ± 0.1992 ± 0.0152
		0.54 – 2.00	2.38	0.084	0.551	0.427	0.719	0.711	-0.0512 ± 0.1275 ± 0.0086	-0.0512 ± 0.1275 ± 0.0086
	0.49 – 0.70	0.00 – 0.23	1.78	0.085	0.407	0.578	0.148	0.857	-0.0888 ± 0.1701 ± 0.0177	-0.0888 ± 0.1701 ± 0.0177
		0.23 – 0.36	1.87	0.085	0.427	0.580	0.295	0.838	0.0156 ± 0.1732 ± 0.0067	0.0156 ± 0.1732 ± 0.0067
		0.36 – 0.54	2.02	0.084	0.463	0.583	0.443	0.806	-0.0247 ± 0.2036 ± 0.0157	-0.0247 ± 0.2036 ± 0.0157
		0.54 – 2.00	2.29	0.084	0.530	0.583	0.754	0.736	0.0942 ± 0.1415 ± 0.0060	0.0942 ± 0.1415 ± 0.0060
0.098 – 0.138	0.20 – 0.28	0.00 – 0.23	2.86	0.116	0.477	0.239	0.139	0.799	-0.0253 ± 0.1065 ± 0.0115	-0.0253 ± 0.1065 ± 0.0115
		0.23 – 0.36	3.18	0.116	0.532	0.239	0.292	0.742	0.0621 ± 0.1462 ± 0.0031	0.0621 ± 0.1462 ± 0.0031
		0.36 – 0.54	3.26	0.115	0.547	0.239	0.441	0.721	-0.1436 ± 0.1110 ± 0.0071	-0.1436 ± 0.1110 ± 0.0071
		0.54 – 2.00	3.53	0.115	0.593	0.244	0.638	0.670	-0.0106 ± 0.1844 ± 0.0039	-0.0106 ± 0.1844 ± 0.0039
	0.28 – 0.37	0.00 – 0.23	2.53	0.116	0.422	0.322	0.143	0.843	0.1427 ± 0.1191 ± 0.0118	0.1427 ± 0.1191 ± 0.0118
		0.23 – 0.36	2.81	0.116	0.469	0.323	0.291	0.799	-0.1090 ± 0.1654 ± 0.0138	-0.1090 ± 0.1654 ± 0.0138
		0.36 – 0.54	3.03	0.116	0.508	0.322	0.442	0.759	-0.0493 ± 0.1462 ± 0.0181	-0.0493 ± 0.1462 ± 0.0181
		0.54 – 2.00	3.21	0.115	0.539	0.325	0.672	0.725	-0.0910 ± 0.1534 ± 0.0133	-0.0910 ± 0.1534 ± 0.0133
	0.37 – 0.49	0.00 – 0.23	2.41	0.116	0.402	0.423	0.148	0.857	-0.0284 ± 0.1428 ± 0.0108	-0.0284 ± 0.1428 ± 0.0108
		0.23 – 0.36	2.51	0.116	0.418	0.426	0.293	0.841	0.1429 ± 0.1548 ± 0.0182	0.1429 ± 0.1548 ± 0.0182
		0.36 – 0.54	2.84	0.116	0.475	0.427	0.441	0.791	-0.1809 ± 0.1918 ± 0.0211	-0.1809 ± 0.1918 ± 0.0211
		0.54 – 2.00	3.11	0.116	0.521	0.427	0.716	0.741	0.0719 ± 0.1449 ± 0.0147	0.0719 ± 0.1449 ± 0.0147
	0.49 – 0.70	0.00 – 0.23	2.38	0.116	0.398	0.577	0.151	0.862	0.2024 ± 0.1733 ± 0.0088	0.2024 ± 0.1733 ± 0.0088
		0.23 – 0.36	2.40	0.116	0.400	0.579	0.296	0.858	-0.1182 ± 0.1651 ± 0.0167	-0.1182 ± 0.1651 ± 0.0167
		0.36 – 0.54	2.55	0.116	0.426	0.582	0.441	0.835	-0.1088 ± 0.1714 ± 0.0072	-0.1088 ± 0.1714 ± 0.0072
		0.54 – 2.00	2.98	0.115	0.500	0.584	0.742	0.765	0.4683 ± 0.1598 ± 0.0142	0.4683 ± 0.1598 ± 0.0142
0.138 – 0.600	0.20 – 0.28	0.00 – 0.23	4.95	0.205	0.467	0.239	0.141	0.811	-0.2010 ± 0.0902 ± 0.0212	-0.2010 ± 0.0902 ± 0.0212
		0.23 – 0.36	5.26	0.214	0.486	0.241	0.290	0.790	0.0528 ± 0.1210 ± 0.0204	0.0528 ± 0.1210 ± 0.0204
		0.36 – 0.54	5.21	0.207	0.497	0.240	0.440	0.776	0.0597 ± 0.1332 ± 0.0160	0.0597 ± 0.1332 ± 0.0160
		0.54 – 2.00	5.42	0.209	0.515	0.244	0.637	0.759	-0.1870 ± 0.2394 ± 0.0224	-0.1870 ± 0.2394 ± 0.0224
	0.28 – 0.37	0.00 – 0.23	4.48	0.201	0.428	0.321	0.147	0.841	0.0618 ± 0.1077 ± 0.0141	0.0618 ± 0.1077 ± 0.0141
		0.23 – 0.36	4.64	0.210	0.430	0.323	0.292	0.835	-0.1419 ± 0.1225 ± 0.0259	-0.1419 ± 0.1225 ± 0.0259
		0.36 – 0.54	4.89	0.211	0.457	0.324	0.439	0.810	0.2199 ± 0.1400 ± 0.0260	0.2199 ± 0.1400 ± 0.0260
		0.54 – 2.00	4.93	0.205	0.474	0.325	0.671	0.793	-0.1300 ± 0.1765 ± 0.0215	-0.1300 ± 0.1765 ± 0.0215
	0.37 – 0.49	0.00 – 0.23	4.38	0.201	0.419	0.422	0.150	0.847	-0.2525 ± 0.1284 ± 0.0071	-0.2525 ± 0.1284 ± 0.0071
		0.23 – 0.36	4.38	0.205	0.413	0.424	0.294	0.850	0.1978 ± 0.1352 ± 0.0193	0.1978 ± 0.1352 ± 0.0193
		0.36 – 0.54	4.65	0.210	0.432	0.427	0.438	0.832	-0.1478 ± 0.1382 ± 0.0175	-0.1478 ± 0.1382 ± 0.0175
		0.54 – 2.00	4.84	0.205	0.466	0.427	0.704	0.799	-0.2439 ± 0.1602 ± 0.0243	-0.2439 ± 0.1602 ± 0.0243
	0.49 – 0.70	0.00 – 0.23	4.33	0.200	0.414	0.575	0.153	0.852	-0.0792 ± 0.1617 ± 0.0131	-0.0792 ± 0.1617 ± 0.0131
		0.23 – 0.36	4.28	0.200	0.410	0.577	0.296	0.852	-0.0395 ± 0.1550 ± 0.0130	-0.0395 ± 0.1550 ± 0.0130
		0.36 – 0.54	4.41	0.206	0.413	0.580	0.444	0.848	0.1829 ± 0.1410 ± 0.0251	0.1829 ± 0.1410 ± 0.0251
		0.54 – 2.00	4.82	0.209	0.454	0.587	0.723	0.811	0.0952 ± 0.1464 ± 0.0267	0.0952 ± 0.1464 ± 0.0267

Table 81. Three-dimensionally binned SFA and CSA amplitudes of the $\cos(2\phi - \phi_S)$ modulation for π^+ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin			Average kinematics						π^-	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(2\phi - \phi_S) / \sqrt{2\epsilon(1-\epsilon)} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(2\phi - \phi_S) \rangle_{\mathrm{L}\perp}$
0.023 – 0.072	0.20 – 0.28	0.00 – 0.23	1.46	0.052	0.561	0.236	0.152	0.709	-0.0943 ± 0.1028 ± 0.0028	-0.0943 ± 0.1028 ± 0.0028
		0.23 – 0.36	1.51	0.047	0.636	0.234	0.298	0.613	-0.0309 ± 0.0676 ± 0.0023	-0.0309 ± 0.0676 ± 0.0023
		0.36 – 0.54	1.53	0.045	0.674	0.236	0.443	0.561	-0.0275 ± 0.0556 ± 0.0012	-0.0275 ± 0.0556 ± 0.0012
		0.54 – 2.00	1.58	0.043	0.729	0.241	0.658	0.483	0.0797 ± 0.0790 ± 0.0033	0.0797 ± 0.0790 ± 0.0033
	0.28 – 0.37	0.00 – 0.23	1.43	0.054	0.527	0.320	0.150	0.748	-0.0660 ± 0.1218 ± 0.0068	-0.0660 ± 0.1218 ± 0.0068
		0.23 – 0.36	1.48	0.049	0.597	0.320	0.296	0.662	-0.2167 ± 0.1841 ± 0.0102	-0.2167 ± 0.1841 ± 0.0102
		0.36 – 0.54	1.50	0.047	0.643	0.319	0.449	0.603	0.0871 ± 0.0731 ± 0.0039	0.0871 ± 0.0731 ± 0.0039
		0.54 – 2.00	1.55	0.045	0.692	0.323	0.703	0.536	-0.1210 ± 0.0702 ± 0.0035	-0.1210 ± 0.0702 ± 0.0035
	0.37 – 0.49	0.00 – 0.23	1.40	0.055	0.505	0.422	0.152	0.774	0.1699 ± 0.1439 ± 0.0065	0.1699 ± 0.1439 ± 0.0065
		0.23 – 0.36	1.45	0.051	0.566	0.423	0.298	0.701	0.2302 ± 0.2189 ± 0.0029	0.2302 ± 0.2189 ± 0.0029
		0.36 – 0.54	1.49	0.048	0.615	0.423	0.448	0.640	-0.1115 ± 0.1357 ± 0.0130	-0.1115 ± 0.1357 ± 0.0130
		0.54 – 2.00	1.53	0.046	0.669	0.424	0.749	0.568	0.0827 ± 0.0763 ± 0.0078	0.0827 ± 0.0763 ± 0.0078
	0.49 – 0.70	0.00 – 0.23	1.37	0.056	0.487	0.579	0.151	0.794	-0.0863 ± 0.1585 ± 0.0055	-0.0863 ± 0.1585 ± 0.0055
		0.23 – 0.36	1.41	0.053	0.532	0.580	0.298	0.743	0.0122 ± 0.1966 ± 0.0029	0.0122 ± 0.1966 ± 0.0029
		0.36 – 0.54	1.44	0.050	0.575	0.578	0.446	0.691	-0.2177 ± 0.2215 ± 0.0043	-0.2177 ± 0.2215 ± 0.0043
		0.54 – 2.00	1.51	0.047	0.638	0.573	0.785	0.611	-0.0720 ± 0.0923 ± 0.0020	-0.0720 ± 0.0923 ± 0.0020
0.072 – 0.098	0.20 – 0.28	0.00 – 0.23	2.10	0.084	0.484	0.239	0.140	0.791	0.0847 ± 0.1255 ± 0.0048	0.0847 ± 0.1255 ± 0.0048
		0.23 – 0.36	2.37	0.084	0.547	0.237	0.294	0.724	0.0713 ± 0.1432 ± 0.0020	0.0713 ± 0.1432 ± 0.0020
		0.36 – 0.54	2.46	0.084	0.569	0.238	0.440	0.695	-0.0165 ± 0.1119 ± 0.0061	-0.0165 ± 0.1119 ± 0.0061
		0.54 – 2.00	2.72	0.083	0.632	0.244	0.644	0.622	0.0813 ± 0.1774 ± 0.0085	0.0813 ± 0.1774 ± 0.0085
	0.28 – 0.37	0.00 – 0.23	1.88	0.084	0.432	0.321	0.142	0.836	-0.1414 ± 0.1417 ± 0.0137	-0.1414 ± 0.1417 ± 0.0137
		0.23 – 0.36	2.13	0.084	0.490	0.322	0.292	0.779	-0.0699 ± 0.2337 ± 0.0022	-0.0699 ± 0.2337 ± 0.0022
		0.36 – 0.54	2.26	0.084	0.523	0.320	0.445	0.742	0.1369 ± 0.1426 ± 0.0010	0.1369 ± 0.1426 ± 0.0010
		0.54 – 2.00	2.48	0.084	0.575	0.324	0.678	0.685	-0.1123 ± 0.1514 ± 0.0152	-0.1123 ± 0.1514 ± 0.0152
	0.37 – 0.49	0.00 – 0.23	1.82	0.084	0.418	0.423	0.146	0.847	-0.1937 ± 0.1674 ± 0.0002	-0.1937 ± 0.1674 ± 0.0002
		0.23 – 0.36	1.95	0.084	0.448	0.424	0.292	0.819	0.0977 ± 0.2153 ± 0.0068	0.0977 ± 0.2153 ± 0.0068
		0.36 – 0.54	2.17	0.084	0.502	0.424	0.442	0.767	-0.2791 ± 0.2433 ± 0.0005	-0.2791 ± 0.2433 ± 0.0005
		0.54 – 2.00	2.37	0.084	0.546	0.425	0.724	0.715	0.0476 ± 0.1506 ± 0.0084	0.0476 ± 0.1506 ± 0.0084
	0.49 – 0.70	0.00 – 0.23	1.78	0.084	0.407	0.579	0.148	0.856	0.0730 ± 0.1998 ± 0.0138	0.0730 ± 0.1998 ± 0.0138
		0.23 – 0.36	1.85	0.084	0.425	0.581	0.295	0.840	0.0984 ± 0.2082 ± 0.0001	0.0984 ± 0.2082 ± 0.0001
		0.36 – 0.54	2.00	0.084	0.461	0.582	0.442	0.808	-0.2123 ± 0.2446 ± 0.0013	-0.2123 ± 0.2446 ± 0.0013
		0.54 – 2.00	2.26	0.084	0.524	0.580	0.751	0.743	-0.0155 ± 0.1809 ± 0.0050	-0.0155 ± 0.1809 ± 0.0050
0.098 – 0.138	0.20 – 0.28	0.00 – 0.23	2.86	0.116	0.477	0.239	0.138	0.799	0.0076 ± 0.1224 ± 0.0073	0.0076 ± 0.1224 ± 0.0073
		0.23 – 0.36	3.17	0.116	0.531	0.238	0.292	0.743	-0.1298 ± 0.1748 ± 0.0085	-0.1298 ± 0.1748 ± 0.0085
		0.36 – 0.54	3.25	0.115	0.545	0.239	0.442	0.724	0.2366 ± 0.1319 ± 0.0053	0.2366 ± 0.1319 ± 0.0053
		0.54 – 2.00	3.54	0.116	0.593	0.244	0.645	0.671	-0.3149 ± 0.2180 ± 0.0165	-0.3149 ± 0.2180 ± 0.0165
	0.28 – 0.37	0.00 – 0.23	2.52	0.116	0.420	0.321	0.144	0.844	0.1222 ± 0.1425 ± 0.0107	0.1222 ± 0.1425 ± 0.0107
		0.23 – 0.36	2.77	0.116	0.462	0.323	0.291	0.806	0.1568 ± 0.1971 ± 0.0041	0.1568 ± 0.1971 ± 0.0041
		0.36 – 0.54	2.98	0.116	0.500	0.322	0.444	0.766	-0.0835 ± 0.1683 ± 0.0100	-0.0835 ± 0.1683 ± 0.0100
		0.54 – 2.00	3.17	0.116	0.532	0.324	0.675	0.732	-0.2101 ± 0.1760 ± 0.0120	-0.2101 ± 0.1760 ± 0.0120
	0.37 – 0.49	0.00 – 0.23	2.39	0.116	0.399	0.422	0.148	0.860	-0.1822 ± 0.1773 ± 0.0150	-0.1822 ± 0.1773 ± 0.0150
		0.23 – 0.36	2.48	0.116	0.413	0.425	0.293	0.845	0.1528 ± 0.1904 ± 0.0013	0.1528 ± 0.1904 ± 0.0013
		0.36 – 0.54	2.80	0.116	0.467	0.426	0.441	0.797	0.1242 ± 0.2412 ± 0.0137	0.1242 ± 0.2412 ± 0.0137
		0.54 – 2.00	3.00	0.115	0.504	0.424	0.716	0.756	-0.0274 ± 0.1755 ± 0.0186	-0.0274 ± 0.1755 ± 0.0186
	0.49 – 0.70	0.00 – 0.23	2.37	0.116	0.396	0.579	0.150	0.863	-0.0855 ± 0.2112 ± 0.0115	-0.0855 ± 0.2112 ± 0.0115
		0.23 – 0.36	2.39	0.116	0.399	0.577	0.295	0.859	0.0802 ± 0.2068 ± 0.0029	0.0802 ± 0.2068 ± 0.0029
		0.36 – 0.54	2.55	0.116	0.426	0.583	0.441	0.834	0.2819 ± 0.2158 ± 0.0108	0.2819 ± 0.2158 ± 0.0108
		0.54 – 2.00	2.92	0.115	0.490	0.581	0.747	0.774	0.0467 ± 0.2016 ± 0.0190	0.0467 ± 0.2016 ± 0.0190
0.138 – 0.600	0.20 – 0.28	0.00 – 0.23	4.91	0.204	0.467	0.239	0.141	0.811	0.0808 ± 0.1087 ± 0.0168	0.0808 ± 0.1087 ± 0.0168
		0.23 – 0.36	5.22	0.212	0.486	0.240	0.290	0.790	-0.0034 ± 0.1431 ± 0.0204	-0.0034 ± 0.1431 ± 0.0204
		0.36 – 0.54	5.18	0.205	0.499	0.239	0.443	0.775	0.0217 ± 0.1566 ± 0.0206	0.0217 ± 0.1566 ± 0.0206
		0.54 – 2.00	5.40	0.211	0.509	0.243	0.645	0.767	0.0667 ± 0.2763 ± 0.0288	0.0667 ± 0.2763 ± 0.0288
	0.28 – 0.37	0.00 – 0.23	4.41	0.199	0.426	0.321	0.148	0.842	-0.0198 ± 0.1335 ± 0.0139	-0.0198 ± 0.1335 ± 0.0139
		0.23 – 0.36	4.55	0.208	0.426	0.322	0.291	0.839	-0.0434 ± 0.1515 ± 0.0219	-0.0434 ± 0.1515 ± 0.0219
		0.36 – 0.54	4.80	0.211	0.450	0.323	0.440	0.816	0.0873 ± 0.1750 ± 0.0371	0.0873 ± 0.1750 ± 0.0371
		0.54 – 2.00	4.79	0.204	0.464	0.324	0.679	0.802	0.1154 ± 0.2053 ± 0.0270	0.1154 ± 0.2053 ± 0.0270
	0.37 – 0.49	0.00 – 0.23	4.26	0.197	0.414	0.422	0.149	0.852	-0.1012 ± 0.1689 ± 0.0217	-0.1012 ± 0.1689 ± 0.0217
		0.23 – 0.36	4.31	0.203	0.410	0.424	0.294	0.852	0.1260 ± 0.1692 ± 0.0132	0.1260 ± 0.1692 ± 0.0132
		0.36 – 0.54	4.59	0.212	0.423	0.425	0.438	0.840	0.2202 ± 0.1805 ± 0.0167	0.2202 ± 0.1805 ± 0.0167
		0.54 – 2.00	4.78	0.208	0.453	0.426	0.712	0.809	-0.0725 ± 0.1960 ± 0.0301	-0.0725 ± 0.1960 ± 0.0301
	0.49 – 0.70	0.00 – 0.23	4.25	0.197	0.413	0.574	0.152	0.852	0.3474 ± 0.2085 ± 0.0184	0.3474 ± 0.2085 ± 0.0184
		0.23 – 0.36	4.13	0.198	0.400	0.574	0.295	0.861	0.1699 ± 0.2032 ± 0.0191	0.1699 ± 0.2032 ± 0.0191
		0.36 – 0.54	4.25	0.203	0.405	0.579	0.443	0.855	-0.1288 ± 0.1864 ± 0.0228	-0.1288 ± 0.1864 ± 0.0228
		0.54 – 2.00	4.67	0.210	0.437	0.581	0.726	0.825	-0.0103 ± 0.2001 ± 0.0276	-0.0103 ± 0.2001 ± 0.0276

Table 82. Three-dimensionally binned SFA and CSA amplitudes of the $\cos(2\phi - \phi_S)$ modulation for π^- as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin			Average kinematics						K^+	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(2\phi - \phi_S) / \sqrt{2\epsilon(1-\epsilon)} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(2\phi - \phi_S) \rangle_{\mathrm{L}\perp}$
0.023 – 0.072	0.20 – 0.28	0.00 – 0.23	1.48	0.052	0.565	0.239	0.149	0.705	0.1579 ± 0.2683 ± 0.0107	0.1579 ± 0.2683 ± 0.0107
		0.23 – 0.36	1.54	0.048	0.638	0.237	0.297	0.612	0.0468 ± 0.1925 ± 0.0012	0.0468 ± 0.1925 ± 0.0012
		0.36 – 0.54	1.55	0.046	0.674	0.239	0.444	0.562	-0.0302 ± 0.1508 ± 0.0044	-0.0302 ± 0.1508 ± 0.0044
		0.54 – 2.00	1.59	0.043	0.734	0.242	0.670	0.476	0.1359 ± 0.1905 ± 0.0214	0.1359 ± 0.1905 ± 0.0214
	0.28 – 0.37	0.00 – 0.23	1.44	0.054	0.529	0.321	0.150	0.747	0.3088 ± 0.2825 ± 0.0001	0.3088 ± 0.2825 ± 0.0001
		0.23 – 0.36	1.51	0.050	0.603	0.322	0.298	0.657	0.5776 ± 0.4342 ± 0.0215	0.5776 ± 0.4342 ± 0.0215
		0.36 – 0.54	1.54	0.047	0.645	0.322	0.448	0.601	-0.0016 ± 0.1712 ± 0.0138	-0.0016 ± 0.1712 ± 0.0138
		0.54 – 2.00	1.56	0.044	0.701	0.326	0.722	0.523	0.2221 ± 0.1541 ± 0.0122	0.2221 ± 0.1541 ± 0.0122
	0.37 – 0.49	0.00 – 0.23	1.43	0.055	0.511	0.422	0.148	0.769	-0.2111 ± 0.2835 ± 0.0123	-0.2111 ± 0.2835 ± 0.0123
		0.23 – 0.36	1.47	0.052	0.557	0.424	0.297	0.713	0.5816 ± 0.4581 ± 0.0253	0.5816 ± 0.4581 ± 0.0253
		0.36 – 0.54	1.51	0.050	0.608	0.424	0.449	0.651	-0.0123 ± 0.2861 ± 0.0175	-0.0123 ± 0.2861 ± 0.0175
		0.54 – 2.00	1.56	0.046	0.671	0.428	0.763	0.565	-0.0962 ± 0.1543 ± 0.0213	-0.0962 ± 0.1543 ± 0.0213
	0.49 – 0.70	0.00 – 0.23	1.42	0.057	0.493	0.572	0.150	0.787	0.3364 ± 0.3576 ± 0.0146	0.3364 ± 0.3576 ± 0.0146
		0.23 – 0.36	1.44	0.054	0.534	0.573	0.298	0.740	-0.1782 ± 0.4440 ± 0.0191	-0.1782 ± 0.4440 ± 0.0191
		0.36 – 0.54	1.49	0.051	0.587	0.576	0.452	0.675	0.1580 ± 0.4436 ± 0.0190	0.1580 ± 0.4436 ± 0.0190
		0.54 – 2.00	1.53	0.048	0.637	0.580	0.805	0.612	0.1254 ± 0.1512 ± 0.0014	0.1254 ± 0.1512 ± 0.0014
0.072 – 0.098	0.20 – 0.28	0.00 – 0.23	2.21	0.084	0.508	0.241	0.142	0.770	-0.1482 ± 0.3461 ± 0.0059	-0.1482 ± 0.3461 ± 0.0059
		0.23 – 0.36	2.43	0.084	0.562	0.240	0.295	0.709	-0.6700 ± 0.3394 ± 0.0133	-0.6700 ± 0.3394 ± 0.0133
		0.36 – 0.54	2.50	0.084	0.578	0.241	0.440	0.683	0.0999 ± 0.3136 ± 0.0068	0.0999 ± 0.3136 ± 0.0068
		0.54 – 2.00	2.72	0.084	0.630	0.244	0.652	0.624	0.1627 ± 0.4615 ± 0.0174	0.1627 ± 0.4615 ± 0.0174
	0.28 – 0.37	0.00 – 0.23	1.98	0.084	0.455	0.323	0.142	0.816	0.0632 ± 0.2991 ± 0.0084	0.0632 ± 0.2991 ± 0.0084
		0.23 – 0.36	2.21	0.084	0.510	0.324	0.293	0.762	0.8852 ± 0.5035 ± 0.0151	0.8852 ± 0.5035 ± 0.0151
		0.36 – 0.54	2.38	0.084	0.550	0.324	0.446	0.714	-0.0050 ± 0.3462 ± 0.0088	-0.0050 ± 0.3462 ± 0.0088
		0.54 – 2.00	2.54	0.084	0.587	0.327	0.690	0.669	-0.1749 ± 0.3152 ± 0.0028	-0.1749 ± 0.3152 ± 0.0028
	0.37 – 0.49	0.00 – 0.23	1.88	0.085	0.429	0.423	0.145	0.839	-0.1244 ± 0.3142 ± 0.0247	-0.1244 ± 0.3142 ± 0.0247
		0.23 – 0.36	2.07	0.084	0.475	0.425	0.294	0.795	0.5259 ± 0.4357 ± 0.0048	0.5259 ± 0.4357 ± 0.0048
		0.36 – 0.54	2.23	0.084	0.512	0.427	0.445	0.758	0.4678 ± 0.5751 ± 0.0090	0.4678 ± 0.5751 ± 0.0090
		0.54 – 2.00	2.44	0.084	0.566	0.430	0.735	0.695	-0.2988 ± 0.3039 ± 0.0059	-0.2988 ± 0.3039 ± 0.0059
	0.49 – 0.70	0.00 – 0.23	1.88	0.085	0.427	0.577	0.150	0.842	-0.0078 ± 0.3911 ± 0.0202	-0.0078 ± 0.3911 ± 0.0202
		0.23 – 0.36	1.94	0.084	0.447	0.575	0.297	0.820	0.5427 ± 0.4061 ± 0.0080	0.5427 ± 0.4061 ± 0.0080
		0.36 – 0.54	2.06	0.085	0.470	0.583	0.446	0.798	-0.2466 ± 0.4791 ± 0.0199	-0.2466 ± 0.4791 ± 0.0199
		0.54 – 2.00	2.33	0.084	0.538	0.587	0.768	0.728	-0.4624 ± 0.3014 ± 0.0249	-0.4624 ± 0.3014 ± 0.0249
0.098 – 0.138	0.20 – 0.28	0.00 – 0.23	2.96	0.116	0.494	0.241	0.139	0.785	0.1893 ± 0.3193 ± 0.0141	0.1893 ± 0.3193 ± 0.0141
		0.23 – 0.36	3.31	0.116	0.554	0.239	0.290	0.718	-0.3397 ± 0.4617 ± 0.0170	-0.3397 ± 0.4617 ± 0.0170
		0.36 – 0.54	3.25	0.115	0.548	0.240	0.443	0.720	0.4571 ± 0.3737 ± 0.0233	0.4571 ± 0.3737 ± 0.0233
		0.54 – 2.00	3.53	0.115	0.596	0.245	0.650	0.664	-0.4807 ± 0.5255 ± 0.0037	-0.4807 ± 0.5255 ± 0.0037
	0.28 – 0.37	0.00 – 0.23	2.64	0.116	0.441	0.324	0.142	0.829	-0.0474 ± 0.2933 ± 0.0204	-0.0474 ± 0.2933 ± 0.0204
		0.23 – 0.36	2.91	0.116	0.485	0.326	0.292	0.787	-0.6835 ± 0.4422 ± 0.0110	-0.6835 ± 0.4422 ± 0.0110
		0.36 – 0.54	3.08	0.115	0.519	0.323	0.446	0.746	-0.2995 ± 0.3740 ± 0.0026	-0.2995 ± 0.3740 ± 0.0026
		0.54 – 2.00	3.20	0.116	0.535	0.327	0.682	0.726	-0.1438 ± 0.4010 ± 0.0132	-0.1438 ± 0.4010 ± 0.0132
	0.37 – 0.49	0.00 – 0.23	2.54	0.116	0.425	0.424	0.148	0.841	-0.3918 ± 0.3200 ± 0.0161	-0.3918 ± 0.3200 ± 0.0161
		0.23 – 0.36	2.66	0.116	0.441	0.427	0.291	0.824	0.0260 ± 0.3763 ± 0.0259	0.0260 ± 0.3763 ± 0.0259
		0.36 – 0.54	3.00	0.117	0.497	0.428	0.442	0.773	-1.0736 ± 0.4767 ± 0.0107	-1.0736 ± 0.4767 ± 0.0107
		0.54 – 2.00	3.21	0.115	0.539	0.428	0.716	0.723	-0.1066 ± 0.3372 ± 0.0055	-0.1066 ± 0.3372 ± 0.0055
	0.49 – 0.70	0.00 – 0.23	2.47	0.116	0.412	0.574	0.150	0.851	-0.2979 ± 0.3879 ± 0.0392	-0.2979 ± 0.3879 ± 0.0392
		0.23 – 0.36	2.50	0.116	0.418	0.577	0.296	0.845	0.6878 ± 0.3956 ± 0.0287	0.6878 ± 0.3956 ± 0.0287
		0.36 – 0.54	2.70	0.116	0.451	0.583	0.443	0.815	0.5194 ± 0.3867 ± 0.0217	0.5194 ± 0.3867 ± 0.0217
		0.54 – 2.00	3.06	0.115	0.514	0.588	0.752	0.752	-0.1350 ± 0.3428 ± 0.0056	-0.1350 ± 0.3428 ± 0.0056
0.138 – 0.600	0.20 – 0.28	0.00 – 0.23	5.15	0.207	0.485	0.242	0.138	0.795	-0.2007 ± 0.2754 ± 0.0361	-0.2007 ± 0.2754 ± 0.0361
		0.23 – 0.36	5.33	0.208	0.505	0.243	0.292	0.773	0.2144 ± 0.4072 ± 0.0331	0.2144 ± 0.4072 ± 0.0331
		0.36 – 0.54	5.06	0.196	0.508	0.241	0.445	0.765	-0.1050 ± 0.4256 ± 0.0193	-0.1050 ± 0.4256 ± 0.0193
		0.54 – 2.00	5.22	0.211	0.493	0.246	0.645	0.779	1.1635 ± 0.7057 ± 0.0320	1.1635 ± 0.7057 ± 0.0320
	0.28 – 0.37	0.00 – 0.23	4.76	0.204	0.449	0.323	0.142	0.825	-0.0492 ± 0.2541 ± 0.0351	-0.0492 ± 0.2541 ± 0.0351
		0.23 – 0.36	5.01	0.211	0.462	0.325	0.289	0.810	0.1706 ± 0.3109 ± 0.0453	0.1706 ± 0.3109 ± 0.0453
		0.36 – 0.54	5.04	0.203	0.488	0.325	0.443	0.783	0.7770 ± 0.3584 ± 0.0220	0.7770 ± 0.3584 ± 0.0220
		0.54 – 2.00	4.69	0.198	0.464	0.327	0.681	0.798	0.8794 ± 0.4104 ± 0.0294	0.8794 ± 0.4104 ± 0.0294
	0.37 – 0.49	0.00 – 0.23	4.63	0.204	0.435	0.424	0.150	0.836	0.3489 ± 0.2836 ± 0.0406	0.3489 ± 0.2836 ± 0.0406
		0.23 – 0.36	4.62	0.204	0.437	0.425	0.292	0.831	0.3275 ± 0.3011 ± 0.0356	0.3275 ± 0.3011 ± 0.0356
		0.36 – 0.54	4.91	0.210	0.458	0.426	0.439	0.812	0.7591 ± 0.3139 ± 0.0443	0.7591 ± 0.3139 ± 0.0443
		0.54 – 2.00	5.02	0.204	0.483	0.428	0.707	0.784	-0.0813 ± 0.3749 ± 0.0469	-0.0813 ± 0.3749 ± 0.0469
	0.49 – 0.70	0.00 – 0.23	4.55	0.204	0.426	0.576	0.149	0.843	-0.6174 ± 0.3617 ± 0.0697	-0.6174 ± 0.3617 ± 0.0697
		0.23 – 0.36	4.52	0.206	0.422	0.577	0.296	0.844	0.2902 ± 0.3340 ± 0.0588	0.2902 ± 0.3340 ± 0.0588
		0.36 – 0.54	4.63	0.207	0.435	0.583	0.443	0.831	0.2256 ± 0.2823 ± 0.0672	0.2256 ± 0.2823 ± 0.0672
		0.54 – 2.00	5.06	0.210	0.473	0.589	0.731	0.796	0.0778 ± 0.3007 ± 0.0483	0.0778 ± 0.3007 ± 0.0483

Table 83. Three-dimensionally binned SFA and CSA amplitudes of the $\cos(2\phi - \phi_S)$ modulation for K^+ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin			Average kinematics						K^-	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(2\phi - \phi_S) / \sqrt{2\epsilon(1-\epsilon)} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(2\phi - \phi_S) \rangle_{\mathrm{L}\perp}$
0.023 – 0.072	0.20 – 0.28	0.00 – 0.23	1.48	0.051	0.575	0.236	0.152	0.692	0.1175 ± 0.3499 ± 0.0035	0.1175 ± 0.3499 ± 0.0035
		0.23 – 0.36	1.51	0.047	0.646	0.236	0.298	0.601	-0.0539 ± 0.2467 ± 0.0031	-0.0539 ± 0.2467 ± 0.0031
		0.36 – 0.54	1.54	0.045	0.684	0.237	0.444	0.547	-0.0984 ± 0.1911 ± 0.0003	-0.0984 ± 0.1911 ± 0.0003
		0.54 – 2.00	1.61	0.043	0.744	0.242	0.666	0.461	0.1236 ± 0.2434 ± 0.0074	0.1236 ± 0.2434 ± 0.0074
	0.28 – 0.37	0.00 – 0.23	1.45	0.053	0.537	0.319	0.151	0.738	0.4346 ± 0.3677 ± 0.0017	0.4346 ± 0.3677 ± 0.0017
		0.23 – 0.36	1.50	0.049	0.608	0.320	0.296	0.650	0.0584 ± 0.5369 ± 0.0223	0.0584 ± 0.5369 ± 0.0223
		0.36 – 0.54	1.51	0.047	0.644	0.319	0.449	0.602	-0.3599 ± 0.2336 ± 0.0042	-0.3599 ± 0.2336 ± 0.0042
		0.54 – 2.00	1.56	0.044	0.701	0.324	0.724	0.523	0.1479 ± 0.2123 ± 0.0065	0.1479 ± 0.2123 ± 0.0065
	0.37 – 0.49	0.00 – 0.23	1.40	0.054	0.513	0.424	0.146	0.768	0.2307 ± 0.4396 ± 0.0017	0.2307 ± 0.4396 ± 0.0017
		0.23 – 0.36	1.48	0.051	0.579	0.422	0.298	0.689	-0.1220 ± 0.7409 ± 0.0201	-0.1220 ± 0.7409 ± 0.0201
		0.36 – 0.54	1.53	0.049	0.622	0.423	0.448	0.633	-0.3957 ± 0.4031 ± 0.0191	-0.3957 ± 0.4031 ± 0.0191
		0.54 – 2.00	1.54	0.045	0.674	0.425	0.770	0.562	0.4186 ± 0.2265 ± 0.0247	0.4186 ± 0.2265 ± 0.0247
	0.49 – 0.70	0.00 – 0.23	1.41	0.055	0.508	0.562	0.151	0.771	0.6297 ± 0.5119 ± 0.0034	0.6297 ± 0.5119 ± 0.0034
		0.23 – 0.36	1.44	0.052	0.550	0.566	0.298	0.721	0.4714 ± 0.6572 ± 0.0120	0.4714 ± 0.6572 ± 0.0120
		0.36 – 0.54	1.49	0.050	0.595	0.572	0.446	0.664	0.0322 ± 0.7191 ± 0.0022	0.0322 ± 0.7191 ± 0.0022
		0.54 – 2.00	1.53	0.046	0.662	0.569	0.799	0.578	0.1045 ± 0.2710 ± 0.0151	0.1045 ± 0.2710 ± 0.0151
0.072 – 0.098	0.20 – 0.28	0.00 – 0.23	2.18	0.084	0.503	0.239	0.139	0.775	-0.3030 ± 0.4896 ± 0.0037	-0.3030 ± 0.4896 ± 0.0037
		0.23 – 0.36	2.46	0.084	0.568	0.237	0.294	0.701	0.7841 ± 0.5094 ± 0.0274	0.7841 ± 0.5094 ± 0.0274
		0.36 – 0.54	2.54	0.084	0.586	0.237	0.440	0.677	0.0976 ± 0.3909 ± 0.0029	0.0976 ± 0.3909 ± 0.0029
		0.54 – 2.00	2.75	0.084	0.637	0.242	0.648	0.614	-0.2626 ± 0.5809 ± 0.0087	-0.2626 ± 0.5809 ± 0.0087
	0.28 – 0.37	0.00 – 0.23	1.95	0.084	0.448	0.323	0.138	0.824	0.3095 ± 0.4311 ± 0.0238	0.3095 ± 0.4311 ± 0.0238
		0.23 – 0.36	2.24	0.084	0.518	0.322	0.292	0.752	0.9878 ± 0.7905 ± 0.0030	0.9878 ± 0.7905 ± 0.0030
		0.36 – 0.54	2.40	0.084	0.555	0.321	0.444	0.712	0.0995 ± 0.4936 ± 0.0225	0.0995 ± 0.4936 ± 0.0225
		0.54 – 2.00	2.48	0.084	0.573	0.324	0.693	0.689	1.2467 ± 0.4491 ± 0.0032	1.2467 ± 0.4491 ± 0.0032
	0.37 – 0.49	0.00 – 0.23	1.84	0.084	0.426	0.424	0.143	0.842	-0.0526 ± 0.5347 ± 0.0243	-0.0526 ± 0.5347 ± 0.0243
		0.23 – 0.36	2.06	0.084	0.475	0.424	0.294	0.794	-0.0787 ± 0.6857 ± 0.0494	-0.0787 ± 0.6857 ± 0.0494
		0.36 – 0.54	2.27	0.083	0.528	0.424	0.443	0.743	-0.7981 ± 0.7502 ± 0.0052	-0.7981 ± 0.7502 ± 0.0052
		0.54 – 2.00	2.45	0.084	0.566	0.423	0.727	0.695	0.1988 ± 0.4718 ± 0.0181	0.1988 ± 0.4718 ± 0.0181
	0.49 – 0.70	0.00 – 0.23	1.89	0.085	0.431	0.567	0.150	0.837	-0.4434 ± 0.6969 ± 0.0014	-0.4434 ± 0.6969 ± 0.0014
		0.23 – 0.36	2.00	0.085	0.455	0.570	0.295	0.811	-0.0983 ± 0.7385 ± 0.0518	-0.0983 ± 0.7385 ± 0.0518
		0.36 – 0.54	2.16	0.084	0.495	0.577	0.440	0.775	0.6772 ± 0.7418 ± 0.0217	0.6772 ± 0.7418 ± 0.0217
		0.54 – 2.00	2.42	0.084	0.556	0.570	0.772	0.707	-0.2438 ± 0.5716 ± 0.0034	-0.2438 ± 0.5716 ± 0.0034
0.098 – 0.138	0.20 – 0.28	0.00 – 0.23	3.02	0.116	0.505	0.240	0.138	0.774	0.7731 ± 0.4131 ± 0.0182	0.7731 ± 0.4131 ± 0.0182
		0.23 – 0.36	3.26	0.115	0.549	0.241	0.290	0.727	-0.4448 ± 0.6176 ± 0.0149	-0.4448 ± 0.6176 ± 0.0149
		0.36 – 0.54	3.30	0.115	0.556	0.238	0.444	0.713	-0.4161 ± 0.5010 ± 0.0009	-0.4161 ± 0.5010 ± 0.0009
		0.54 – 2.00	3.61	0.115	0.607	0.243	0.649	0.655	0.0264 ± 0.8082 ± 0.0077	0.0264 ± 0.8082 ± 0.0077
	0.28 – 0.37	0.00 – 0.23	2.69	0.116	0.450	0.323	0.142	0.819	0.7378 ± 0.4593 ± 0.0107	0.7378 ± 0.4593 ± 0.0107
		0.23 – 0.36	2.98	0.116	0.501	0.322	0.294	0.769	-0.5698 ± 0.6913 ± 0.0261	-0.5698 ± 0.6913 ± 0.0261
		0.36 – 0.54	3.06	0.115	0.516	0.324	0.450	0.750	0.5569 ± 0.5989 ± 0.0014	0.5569 ± 0.5989 ± 0.0014
		0.54 – 2.00	3.34	0.116	0.559	0.324	0.694	0.703	-1.5414 ± 0.5306 ± 0.0017	-1.5414 ± 0.5306 ± 0.0017
	0.37 – 0.49	0.00 – 0.23	2.42	0.115	0.408	0.423	0.149	0.854	0.4965 ± 0.5365 ± 0.0071	0.4965 ± 0.5365 ± 0.0071
		0.23 – 0.36	2.69	0.117	0.447	0.427	0.293	0.819	0.5681 ± 0.6130 ± 0.0415	0.5681 ± 0.6130 ± 0.0415
		0.36 – 0.54	2.94	0.116	0.491	0.428	0.442	0.778	1.3173 ± 0.8026 ± 0.0369	1.3173 ± 0.8026 ± 0.0369
		0.54 – 2.00	3.19	0.114	0.540	0.424	0.741	0.723	0.5241 ± 0.5588 ± 0.0122	0.5241 ± 0.5588 ± 0.0122
	0.49 – 0.70	0.00 – 0.23	2.43	0.115	0.407	0.563	0.149	0.854	-1.6861 ± 0.9261 ± 0.0048	-1.6861 ± 0.9261 ± 0.0048
		0.23 – 0.36	2.47	0.115	0.416	0.572	0.295	0.848	-0.5017 ± 0.7571 ± 0.0227	-0.5017 ± 0.7571 ± 0.0227
		0.36 – 0.54	2.72	0.116	0.453	0.577	0.435	0.813	-0.6976 ± 0.7710 ± 0.0487	-0.6976 ± 0.7710 ± 0.0487
		0.54 – 2.00	3.08	0.115	0.517	0.574	0.764	0.750	-1.2007 ± 0.7038 ± 0.0234	-1.2007 ± 0.7038 ± 0.0234
0.138 – 0.600	0.20 – 0.28	0.00 – 0.23	4.98	0.201	0.481	0.241	0.144	0.800	0.0079 ± 0.3940 ± 0.0355	0.0079 ± 0.3940 ± 0.0355
		0.23 – 0.36	5.30	0.206	0.507	0.241	0.290	0.770	0.1039 ± 0.5803 ± 0.0847	0.1039 ± 0.5803 ± 0.0847
		0.36 – 0.54	5.32	0.204	0.518	0.239	0.449	0.757	0.1128 ± 0.5825 ± 0.0050	0.1128 ± 0.5825 ± 0.0050
		0.54 – 2.00	5.44	0.205	0.527	0.245	0.663	0.747	-0.9415 ± 0.9260 ± 0.0957	-0.9415 ± 0.9260 ± 0.0957
	0.28 – 0.37	0.00 – 0.23	4.71	0.203	0.451	0.322	0.146	0.822	-0.3236 ± 0.4390 ± 0.0178	-0.3236 ± 0.4390 ± 0.0178
		0.23 – 0.36	4.92	0.209	0.462	0.325	0.291	0.809	0.0844 ± 0.4835 ± 0.0656	0.0844 ± 0.4835 ± 0.0656
		0.36 – 0.54	4.90	0.205	0.473	0.325	0.441	0.795	-0.0483 ± 0.5481 ± 0.0846	-0.0483 ± 0.5481 ± 0.0846
		0.54 – 2.00	5.07	0.200	0.503	0.324	0.691	0.765	-1.1741 ± 0.5552 ± 0.0126	-1.1741 ± 0.5552 ± 0.0126
	0.37 – 0.49	0.00 – 0.23	4.35	0.195	0.430	0.420	0.149	0.839	-0.4024 ± 0.5648 ± 0.0173	-0.4024 ± 0.5648 ± 0.0173
		0.23 – 0.36	4.49	0.205	0.422	0.423	0.293	0.843	-0.2658 ± 0.5361 ± 0.0271	-0.2658 ± 0.5361 ± 0.0271
		0.36 – 0.54	4.75	0.207	0.450	0.426	0.437	0.817	-1.0829 ± 0.5626 ± 0.0525	-1.0829 ± 0.5626 ± 0.0525
		0.54 – 2.00	4.87	0.203	0.474	0.425	0.728	0.792	0.1057 ± 0.6257 ± 0.0164	0.1057 ± 0.6257 ± 0.0164
	0.49 – 0.70	0.00 – 0.23	4.39	0.196	0.432	0.562	0.154	0.839	0.5624 ± 0.6861 ± 0.0205	0.5624 ± 0.6861 ± 0.0205
		0.23 – 0.36	4.35	0.201	0.419	0.571	0.294	0.846	-0.5694 ± 0.9550 ± 0.0205	-0.5694 ± 0.9550 ± 0.0205
		0.36 – 0.54	4.56	0.207	0.429	0.577	0.440	0.838	0.0938 ± 0.6178 ± 0.0420	0.0938 ± 0.6178 ± 0.0420
		0.54 – 2.00	4.85	0.204	0.470	0.579	0.735	0.796	0.6316 ± 0.6220 ± 0.0453	0.6316 ± 0.6220 ± 0.0453

Table 84. Three-dimensionally binned SFA and CSA amplitudes of the $\cos(2\phi - \phi_S)$ modulation for K^- as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin			Average kinematics						p	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(2\phi - \phi_S) / \sqrt{2\epsilon(1-\epsilon)} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(2\phi - \phi_S) \rangle_{\mathrm{L}\perp}$
0.023 – 0.073	0.20 – 0.34	0.00 – 0.24	1.60	0.048	0.656	0.281	0.167	0.598	0.2017 ± 0.3622 ± 0.0091	0.2017 ± 0.3622 ± 0.0091
		0.24 – 0.40	1.61	0.045	0.698	0.274	0.327	0.535	-0.0128 ± 0.1831 ± 0.0060	-0.0128 ± 0.1831 ± 0.0060
		0.40 – 0.57	1.60	0.044	0.713	0.271	0.483	0.512	-0.0653 ± 0.1500 ± 0.0016	-0.0653 ± 0.1500 ± 0.0016
		0.57 – 2.00	1.60	0.043	0.734	0.276	0.728	0.480	-0.0918 ± 0.1439 ± 0.0052	-0.0918 ± 0.1439 ± 0.0052
	0.34 – 0.43	0.00 – 0.24	1.48	0.053	0.544	0.384	0.157	0.736	0.5411 ± 0.3133 ± 0.0132	0.5411 ± 0.3133 ± 0.0132
		0.24 – 0.40	1.51	0.050	0.603	0.384	0.322	0.659	0.2878 ± 0.4565 ± 0.0449	0.2878 ± 0.4565 ± 0.0449
		0.40 – 0.57	1.54	0.049	0.632	0.383	0.483	0.620	0.0361 ± 0.2440 ± 0.0067	0.0361 ± 0.2440 ± 0.0067
		0.57 – 2.00	1.54	0.046	0.669	0.384	0.766	0.568	0.0440 ± 0.1772 ± 0.0059	0.0440 ± 0.1772 ± 0.0059
	0.43 – 0.52	0.00 – 0.24	1.43	0.056	0.503	0.473	0.159	0.777	0.2501 ± 0.3662 ± 0.0044	0.2501 ± 0.3662 ± 0.0044
		0.24 – 0.40	1.47	0.052	0.567	0.471	0.322	0.699	0.8326 ± 0.5113 ± 0.0522	0.8326 ± 0.5113 ± 0.0522
		0.40 – 0.57	1.50	0.050	0.597	0.472	0.481	0.663	0.4676 ± 0.4864 ± 0.0619	0.4676 ± 0.4864 ± 0.0619
		0.57 – 2.00	1.52	0.047	0.641	0.471	0.796	0.604	-0.4318 ± 0.2214 ± 0.0086	-0.4318 ± 0.2214 ± 0.0086
	0.52 – 0.70	0.00 – 0.24	1.40	0.057	0.487	0.588	0.153	0.795	0.5167 ± 0.4069 ± 0.0118	0.5167 ± 0.4069 ± 0.0118
		0.24 – 0.40	1.45	0.055	0.527	0.587	0.321	0.747	0.2052 ± 0.4618 ± 0.0348	0.2052 ± 0.4618 ± 0.0348
		0.40 – 0.57	1.46	0.052	0.561	0.589	0.482	0.707	0.2602 ± 0.5766 ± 0.0556	0.2602 ± 0.5766 ± 0.0556
		0.57 – 2.00	1.50	0.049	0.607	0.591	0.808	0.649	0.0251 ± 0.2201 ± 0.0089	0.0251 ± 0.2201 ± 0.0089
0.073 – 0.107	0.20 – 0.34	0.00 – 0.24	2.83	0.089	0.617	0.293	0.158	0.653	-0.5377 ± 0.4092 ± 0.0177	-0.5377 ± 0.4092 ± 0.0177
		0.24 – 0.40	2.91	0.088	0.638	0.285	0.321	0.624	0.3195 ± 0.5410 ± 0.0124	0.3195 ± 0.5410 ± 0.0124
		0.40 – 0.57	3.01	0.088	0.661	0.279	0.481	0.592	0.1541 ± 0.2906 ± 0.0209	0.1541 ± 0.2906 ± 0.0209
		0.57 – 2.00	3.03	0.088	0.666	0.282	0.718	0.584	0.6598 ± 0.3179 ± 0.0078	0.6598 ± 0.3179 ± 0.0078
	0.34 – 0.43	0.00 – 0.24	2.34	0.089	0.509	0.385	0.148	0.775	-0.1143 ± 0.3620 ± 0.0237	-0.1143 ± 0.3620 ± 0.0237
		0.24 – 0.40	2.49	0.088	0.545	0.385	0.317	0.732	0.3944 ± 0.4962 ± 0.0174	0.3944 ± 0.4962 ± 0.0174
		0.40 – 0.57	2.53	0.088	0.558	0.385	0.480	0.717	0.5640 ± 0.4366 ± 0.0384	0.5640 ± 0.4366 ± 0.0384
		0.57 – 2.00	2.63	0.088	0.575	0.385	0.744	0.694	-0.5664 ± 0.3222 ± 0.0287	-0.5664 ± 0.3222 ± 0.0287
	0.43 – 0.52	0.00 – 0.24	2.10	0.089	0.458	0.473	0.155	0.817	0.1200 ± 0.3914 ± 0.0027	0.1200 ± 0.3914 ± 0.0027
		0.24 – 0.40	2.22	0.088	0.485	0.473	0.319	0.789	-0.4687 ± 0.4484 ± 0.0232	-0.4687 ± 0.4484 ± 0.0232
		0.40 – 0.57	2.34	0.088	0.515	0.474	0.477	0.759	0.4239 ± 0.5779 ± 0.0124	0.4239 ± 0.5779 ± 0.0124
		0.57 – 2.00	2.45	0.088	0.538	0.472	0.773	0.731	0.0565 ± 0.3892 ± 0.0163	0.0565 ± 0.3892 ± 0.0163
	0.52 – 0.70	0.00 – 0.24	1.89	0.089	0.410	0.592	0.156	0.856	-1.0987 ± 0.4030 ± 0.0032	-1.0987 ± 0.4030 ± 0.0032
		0.24 – 0.40	1.95	0.089	0.427	0.593	0.320	0.839	-0.2575 ± 0.3870 ± 0.0441	-0.2575 ± 0.3870 ± 0.0441
		0.40 – 0.57	2.05	0.088	0.450	0.594	0.481	0.817	0.8169 ± 0.5530 ± 0.0361	0.8169 ± 0.5530 ± 0.0361
		0.57 – 2.00	2.24	0.088	0.494	0.598	0.781	0.772	0.1605 ± 0.3663 ± 0.0325	0.1605 ± 0.3663 ± 0.0325
0.107 – 0.157	0.20 – 0.34	0.00 – 0.24	3.97	0.128	0.600	0.295	0.156	0.677	0.0964 ± 0.3932 ± 0.0143	0.0964 ± 0.3932 ± 0.0143
		0.24 – 0.40	4.13	0.129	0.622	0.288	0.321	0.648	-0.3662 ± 0.5013 ± 0.0019	-0.3662 ± 0.5013 ± 0.0019
		0.40 – 0.57	4.27	0.128	0.644	0.283	0.481	0.617	-0.2593 ± 0.3767 ± 0.0048	-0.2593 ± 0.3767 ± 0.0048
		0.57 – 2.00	4.24	0.127	0.646	0.288	0.719	0.613	-0.2676 ± 0.3939 ± 0.0335	-0.2676 ± 0.3939 ± 0.0335
	0.34 – 0.43	0.00 – 0.24	3.38	0.130	0.504	0.387	0.152	0.780	-0.0234 ± 0.3531 ± 0.0158	-0.0234 ± 0.3531 ± 0.0158
		0.24 – 0.40	3.48	0.129	0.523	0.388	0.316	0.759	-0.6372 ± 0.4000 ± 0.0196	-0.6372 ± 0.4000 ± 0.0196
		0.40 – 0.57	3.69	0.128	0.555	0.386	0.477	0.722	0.4775 ± 0.5223 ± 0.0554	0.4775 ± 0.5223 ± 0.0554
		0.57 – 2.00	3.71	0.127	0.563	0.385	0.754	0.712	0.1994 ± 0.4286 ± 0.0031	0.1994 ± 0.4286 ± 0.0031
	0.43 – 0.52	0.00 – 0.24	3.06	0.129	0.457	0.474	0.156	0.820	-0.0549 ± 0.3998 ± 0.0093	-0.0549 ± 0.3998 ± 0.0093
		0.24 – 0.40	3.14	0.130	0.469	0.475	0.317	0.807	0.0514 ± 0.4171 ± 0.0614	0.0514 ± 0.4171 ± 0.0614
		0.40 – 0.57	3.29	0.129	0.492	0.472	0.478	0.784	-0.2288 ± 0.5617 ± 0.0104	-0.2288 ± 0.5617 ± 0.0104
		0.57 – 2.00	3.45	0.128	0.524	0.473	0.771	0.747	0.6931 ± 0.4804 ± 0.0411	0.6931 ± 0.4804 ± 0.0411
	0.52 – 0.70	0.00 – 0.24	2.75	0.129	0.413	0.594	0.154	0.852	-0.1818 ± 0.4329 ± 0.0083	-0.1818 ± 0.4329 ± 0.0083
		0.24 – 0.40	2.77	0.129	0.415	0.594	0.320	0.848	-0.3548 ± 0.3997 ± 0.0342	-0.3548 ± 0.3997 ± 0.0342
		0.40 – 0.57	2.85	0.130	0.425	0.602	0.479	0.840	-0.1418 ± 0.4866 ± 0.0034	-0.1418 ± 0.4866 ± 0.0034
		0.57 – 2.00	3.17	0.129	0.476	0.602	0.769	0.788	-0.4400 ± 0.4796 ± 0.0418	-0.4400 ± 0.4796 ± 0.0418
0.157 – 0.600	0.20 – 0.34	0.00 – 0.24	6.65	0.229	0.566	0.301	0.155	0.717	0.0267 ± 0.4106 ± 0.0061	0.0267 ± 0.4106 ± 0.0061
		0.24 – 0.40	6.49	0.219	0.579	0.298	0.317	0.703	-0.5509 ± 0.4611 ± 0.0160	-0.5509 ± 0.4611 ± 0.0160
		0.40 – 0.57	6.54	0.211	0.608	0.290	0.476	0.664	0.5175 ± 0.5360 ± 0.0038	0.5175 ± 0.5360 ± 0.0038
		0.57 – 2.00	6.59	0.216	0.597	0.292	0.719	0.678	-0.5660 ± 0.5835 ± 0.0521	-0.5660 ± 0.5835 ± 0.0521
	0.34 – 0.43	0.00 – 0.24	5.84	0.231	0.492	0.386	0.154	0.793	0.1980 ± 0.3349 ± 0.0079	0.1980 ± 0.3349 ± 0.0079
		0.24 – 0.40	5.96	0.233	0.499	0.387	0.315	0.786	0.2673 ± 0.3439 ± 0.0187	0.2673 ± 0.3439 ± 0.0187
		0.40 – 0.57	5.97	0.230	0.509	0.389	0.473	0.774	0.3952 ± 0.5110 ± 0.0496	0.3952 ± 0.5110 ± 0.0496
		0.57 – 2.00	6.10	0.235	0.511	0.386	0.764	0.771	-0.2356 ± 0.5401 ± 0.0272	-0.2356 ± 0.5401 ± 0.0272
	0.43 – 0.52	0.00 – 0.24	5.22	0.228	0.444	0.474	0.153	0.833	-0.2867 ± 0.3905 ± 0.0530	-0.2867 ± 0.3905 ± 0.0530
		0.24 – 0.40	5.38	0.234	0.450	0.473	0.316	0.826	-0.4502 ± 0.3641 ± 0.0497	-0.4502 ± 0.3641 ± 0.0497
		0.40 – 0.57	5.47	0.234	0.458	0.476	0.476	0.818	-0.5382 ± 0.4602 ± 0.0923	-0.5382 ± 0.4602 ± 0.0923
		0.57 – 2.00	5.60	0.237	0.467	0.476	0.756	0.805	0.2962 ± 0.5422 ± 0.0941	0.2962 ± 0.5422 ± 0.0941
	0.52 – 0.70	0.00 – 0.24	4.95	0.223	0.426	0.593	0.156	0.844	0.3123 ± 0.4255 ± 0.0216	0.3123 ± 0.4255 ± 0.0216
		0.24 – 0.40	4.89	0.229	0.411	0.594	0.319	0.855	0.1199 ± 0.3958 ± 0.0613	0.1199 ± 0.3958 ± 0.0613
		0.40 – 0.57	4.88	0.231	0.411	0.599	0.479	0.853	0.0282 ± 0.4218 ± 0.0891	0.0282 ± 0.4218 ± 0.0891
		0.57 – 2.00	5.07	0.233	0.427	0.604	0.749	0.837	0.6633 ± 0.4802 ± 0.0734	0.6633 ± 0.4802 ± 0.0734

Table 85. Three-dimensionally binned SFA and CSA amplitudes of the $\cos(2\phi - \phi_S)$ modulation for p as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

5.8 $\cos(\phi_S)$ modulation

Kinematic bin		Average kinematics						π^+	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(\phi_S)/\sqrt{2\epsilon(1-\epsilon)} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(\phi_S) \rangle_{\mathrm{L}\perp}$
x	0.023 – 0.046	1.29	0.036	0.702	0.336	0.486	0.526	0.0074 ± 0.0248 ± 0.0051	0.0012 ± 0.0164 ± 0.0022
	0.046 – 0.067	1.64	0.056	0.567	0.356	0.408	0.700	0.0334 ± 0.0246 ± 0.0077	0.0236 ± 0.0141 ± 0.0026
	0.067 – 0.082	1.98	0.074	0.516	0.366	0.375	0.752	0.0921 ± 0.0340 ± 0.0077	0.0497 ± 0.0179 ± 0.0015
	0.082 – 0.105	2.34	0.093	0.489	0.374	0.358	0.778	-0.0157 ± 0.0326 ± 0.0083	-0.0101 ± 0.0167 ± 0.0015
	0.082 – 0.105	2.34	0.093	0.489	0.374	0.358	0.778	-0.0157 ± 0.0326 ± 0.0083	-0.0101 ± 0.0167 ± 0.0015
	0.105 – 0.134	2.87	0.118	0.469	0.379	0.348	0.796	0.0328 ± 0.0364 ± 0.0134	0.0130 ± 0.0188 ± 0.0036
	0.134 – 0.186	3.69	0.157	0.456	0.379	0.342	0.811	0.0157 ± 0.0387 ± 0.0183	-0.0062 ± 0.0208 ± 0.0055
	0.186 – 0.600	5.71	0.254	0.437	0.375	0.343	0.832	0.0259 ± 0.0494 ± 0.0366	0.0131 ± 0.0281 ± 0.0124
z	0.200 – 0.260	2.44	0.087	0.594	0.229	0.344	0.661	0.0015 ± 0.0212 ± 0.0102	-0.0002 ± 0.0126 ± 0.0046
	0.260 – 0.320	2.46	0.094	0.556	0.289	0.371	0.702	0.0090 ± 0.0248 ± 0.0147	0.0082 ± 0.0138 ± 0.0065
	0.320 – 0.380	2.45	0.098	0.533	0.349	0.394	0.725	0.0409 ± 0.0295 ± 0.0155	0.0142 ± 0.0156 ± 0.0066
	0.380 – 0.450	2.45	0.100	0.520	0.413	0.418	0.740	0.0456 ± 0.0329 ± 0.0174	0.0139 ± 0.0168 ± 0.0077
	0.450 – 0.520	2.44	0.101	0.508	0.483	0.441	0.753	0.0820 ± 0.0401 ± 0.0194	0.0468 ± 0.0198 ± 0.0086
	0.450 – 0.520	2.44	0.101	0.508	0.483	0.441	0.753	0.0820 ± 0.0401 ± 0.0194	0.0468 ± 0.0198 ± 0.0086
	0.520 – 0.600	2.43	0.102	0.499	0.558	0.460	0.763	0.0020 ± 0.0457 ± 0.0207	0.0043 ± 0.0219 ± 0.0096
	0.600 – 0.700	2.41	0.104	0.481	0.647	0.466	0.785	0.0794 ± 0.0499 ± 0.0232	0.0398 ± 0.0235 ± 0.0104
	0.700 – 0.760	2.41	0.107	0.457	0.729	0.453	0.813	-0.0472 ± 0.0762 ± 0.0220	-0.0380 ± 0.0353 ± 0.0093
	0.760 – 0.840	2.35	0.108	0.434	0.798	0.433	0.837	0.0230 ± 0.0756 ± 0.0193	-0.0041 ± 0.0350 ± 0.0082
	0.840 – 1.200	2.31	0.116	0.394	0.916	0.376	0.872	-0.1468 ± 0.0690 ± 0.0208	-0.0530 ± 0.0316 ± 0.0092
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.56	0.110	0.460	0.341	0.110	0.813	0.0413 ± 0.0304 ± 0.0171	0.0213 ± 0.0152 ± 0.0066
	0.170 – 0.250	2.56	0.108	0.489	0.350	0.211	0.779	0.0796 ± 0.0354 ± 0.0225	0.0248 ± 0.0166 ± 0.0080
	0.250 – 0.310	2.52	0.103	0.514	0.354	0.280	0.750	-0.0225 ± 0.0416 ± 0.0254	0.0039 ± 0.0196 ± 0.0093
	0.310 – 0.380	2.46	0.097	0.540	0.355	0.345	0.721	0.0530 ± 0.0356 ± 0.0156	0.0153 ± 0.0182 ± 0.0065
	0.310 – 0.380	2.46	0.097	0.540	0.355	0.345	0.721	0.0530 ± 0.0356 ± 0.0156	0.0153 ± 0.0182 ± 0.0065
	0.380 – 0.520	2.39	0.090	0.570	0.356	0.446	0.686	-0.0018 ± 0.0244 ± 0.0125	0.0018 ± 0.0136 ± 0.0057
	0.520 – 0.690	2.34	0.084	0.601	0.373	0.594	0.648	0.0258 ± 0.0272 ± 0.0124	0.0191 ± 0.0161 ± 0.0056
	0.690 – 2.000	2.30	0.076	0.642	0.429	0.849	0.597	0.0191 ± 0.0331 ± 0.0132	0.0076 ± 0.0205 ± 0.0059

Table 86. One-dimensionally binned SFA and CSA amplitudes of the $\cos(\phi_S)$ modulation for π^+ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin		Average kinematics						π^0	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(\phi_S)/\sqrt{2\epsilon(1-\epsilon)} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(\phi_S) \rangle_{\mathrm{L}\perp}$
x	0.023 – 0.046	1.30	0.036	0.712	0.325	0.492	0.512	-0.0781 ± 0.0727 ± 0.0512	-0.0458 ± 0.0483 ± 0.0233
	0.046 – 0.067	1.72	0.056	0.597	0.352	0.406	0.665	-0.1060 ± 0.0740 ± 0.0513	-0.0618 ± 0.0433 ± 0.0233
	0.067 – 0.082	2.14	0.074	0.558	0.366	0.374	0.708	0.0968 ± 0.0990 ± 0.0512	0.0187 ± 0.0542 ± 0.0234
	0.082 – 0.105	2.58	0.093	0.538	0.372	0.353	0.731	0.0430 ± 0.0954 ± 0.0515	0.0074 ± 0.0500 ± 0.0233
	0.082 – 0.105	2.58	0.093	0.538	0.372	0.353	0.731	0.0430 ± 0.0954 ± 0.0515	0.0074 ± 0.0500 ± 0.0233
	0.105 – 0.134	3.19	0.118	0.522	0.378	0.338	0.749	-0.0098 ± 0.1131 ± 0.0512	0.0167 ± 0.0578 ± 0.0235
	0.134 – 0.186	4.10	0.156	0.507	0.380	0.323	0.766	0.2047 ± 0.1116 ± 0.0524	0.0872 ± 0.0602 ± 0.0235
	0.186 – 0.600	6.14	0.249	0.479	0.386	0.326	0.797	0.1835 ± 0.1415 ± 0.0547	0.1184 ± 0.0825 ± 0.0243
z	0.200 – 0.260	2.45	0.078	0.648	0.229	0.337	0.598	-0.0787 ± 0.0834 ± 0.0380	-0.0418 ± 0.0533 ± 0.0170
	0.260 – 0.320	2.49	0.085	0.609	0.289	0.372	0.645	-0.0580 ± 0.0777 ± 0.0383	-0.0404 ± 0.0467 ± 0.0169
	0.320 – 0.380	2.52	0.090	0.581	0.348	0.401	0.679	0.0022 ± 0.0824 ± 0.0385	0.0108 ± 0.0472 ± 0.0168
	0.380 – 0.450	2.53	0.095	0.558	0.413	0.427	0.705	0.0292 ± 0.0832 ± 0.0397	0.0215 ± 0.0440 ± 0.0174
	0.450 – 0.520	2.55	0.099	0.537	0.483	0.450	0.728	0.1984 ± 0.0926 ± 0.0386	0.0971 ± 0.0468 ± 0.0169
	0.450 – 0.520	2.55	0.099	0.537	0.483	0.450	0.728	0.1984 ± 0.0926 ± 0.0386	0.0971 ± 0.0468 ± 0.0169
	0.520 – 0.600	2.57	0.102	0.517	0.557	0.469	0.750	-0.0332 ± 0.1031 ± 0.0399	-0.0338 ± 0.0492 ± 0.0176
	0.600 – 0.700	2.59	0.106	0.496	0.645	0.483	0.774	0.0304 ± 0.1103 ± 0.0387	-0.0012 ± 0.0512 ± 0.0170
	0.700 – 0.760	2.61	0.112	0.472	0.728	0.494	0.799	-0.2074 ± 0.1653 ± 0.0419	-0.0789 ± 0.0776 ± 0.0182
	0.760 – 0.840	2.66	0.116	0.457	0.796	0.488	0.815	0.0546 ± 0.1851 ± 0.0407	-0.0044 ± 0.0847 ± 0.0180
	0.840 – 1.200	2.56	0.121	0.418	0.908	0.478	0.849	0.0582 ± 0.2079 ± 0.0408	0.0340 ± 0.0954 ± 0.0182
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.82	0.114	0.481	0.338	0.111	0.799	-0.0255 ± 0.1120 ± 0.0237	-0.0190 ± 0.0551 ± 0.0100
	0.170 – 0.250	2.69	0.103	0.529	0.340	0.211	0.745	0.0200 ± 0.1194 ± 0.0239	0.0028 ± 0.0555 ± 0.0098
	0.250 – 0.310	2.59	0.095	0.563	0.343	0.280	0.705	0.0414 ± 0.1373 ± 0.0307	0.0356 ± 0.0628 ± 0.0112
	0.310 – 0.380	2.49	0.088	0.591	0.347	0.345	0.668	-0.0075 ± 0.1435 ± 0.0268	-0.0493 ± 0.0641 ± 0.0102
	0.310 – 0.380	2.49	0.088	0.591	0.347	0.345	0.668	-0.0075 ± 0.1435 ± 0.0268	-0.0493 ± 0.0641 ± 0.0102
	0.380 – 0.520	2.39	0.081	0.624	0.353	0.446	0.625	-0.0487 ± 0.0811 ± 0.0232	-0.0180 ± 0.0433 ± 0.0098
	0.520 – 0.690	2.30	0.074	0.652	0.371	0.595	0.587	-0.0399 ± 0.0703 ± 0.0224	-0.0166 ± 0.0415 ± 0.0101
	0.690 – 2.000	2.27	0.071	0.675	0.428	0.849	0.554	0.1001 ± 0.0695 ± 0.0227	0.0686 ± 0.0431 ± 0.0097

Table 87. One-dimensionally binned SFA and CSA amplitudes of the $\cos(\phi_S)$ modulation for π^0 as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin		Average kinematics						π^-	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(\phi_S)/\sqrt{2\epsilon(1-\epsilon)} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(\phi_S) \rangle_{\mathrm{L}\perp}$
x	0.023 – 0.046	1.29	0.036	0.704	0.330	0.481	0.524	0.0423 ± 0.0275 ± 0.0007	0.0287 ± 0.0182 ± 0.0008
	0.046 – 0.067	1.64	0.056	0.568	0.350	0.402	0.699	-0.0286 ± 0.0277 ± 0.0009	-0.0170 ± 0.0159 ± 0.0030
	0.067 – 0.082	1.98	0.074	0.515	0.359	0.369	0.752	0.0226 ± 0.0391 ± 0.0010	0.0115 ± 0.0207 ± 0.0030
	0.082 – 0.105	2.33	0.093	0.487	0.366	0.354	0.779	0.0188 ± 0.0379 ± 0.0051	0.0075 ± 0.0196 ± 0.0048
	0.082 – 0.105	2.33	0.093	0.487	0.366	0.354	0.779	0.0188 ± 0.0379 ± 0.0051	0.0075 ± 0.0196 ± 0.0048
	0.105 – 0.134	2.86	0.118	0.468	0.369	0.348	0.797	0.0602 ± 0.0434 ± 0.0124	0.0303 ± 0.0227 ± 0.0081
	0.134 – 0.186	3.66	0.156	0.454	0.369	0.342	0.813	0.0575 ± 0.0475 ± 0.0183	0.0416 ± 0.0258 ± 0.0094
	0.186 – 0.600	5.66	0.253	0.434	0.364	0.349	0.835	-0.0676 ± 0.0629 ± 0.0300	-0.0337 ± 0.0361 ± 0.0139
z	0.200 – 0.260	2.39	0.084	0.598	0.229	0.350	0.656	0.0336 ± 0.0237 ± 0.0021	0.0156 ± 0.0142 ± 0.0011
	0.260 – 0.320	2.38	0.091	0.559	0.289	0.379	0.698	0.0582 ± 0.0282 ± 0.0011	0.0305 ± 0.0158 ± 0.0029
	0.320 – 0.380	2.36	0.094	0.536	0.348	0.403	0.721	-0.0752 ± 0.0339 ± 0.0009	-0.0310 ± 0.0181 ± 0.0034
	0.380 – 0.450	2.37	0.097	0.521	0.413	0.422	0.738	0.0226 ± 0.0391 ± 0.0041	0.0068 ± 0.0200 ± 0.0061
	0.450 – 0.520	2.35	0.098	0.509	0.483	0.437	0.751	-0.0401 ± 0.0482 ± 0.0046	-0.0160 ± 0.0240 ± 0.0056
	0.450 – 0.520	2.35	0.098	0.509	0.483	0.437	0.751	-0.0401 ± 0.0482 ± 0.0046	-0.0160 ± 0.0240 ± 0.0056
	0.520 – 0.600	2.31	0.098	0.498	0.558	0.449	0.764	0.0329 ± 0.0555 ± 0.0083	0.0197 ± 0.0267 ± 0.0063
	0.600 – 0.700	2.27	0.099	0.479	0.646	0.438	0.787	0.0219 ± 0.0622 ± 0.0091	0.0245 ± 0.0293 ± 0.0050
	0.700 – 0.760	2.19	0.099	0.452	0.729	0.416	0.818	0.0538 ± 0.0968 ± 0.0158	0.0242 ± 0.0445 ± 0.0066
	0.760 – 0.840	2.15	0.101	0.432	0.798	0.389	0.839	-0.2080 ± 0.0945 ± 0.0140	-0.1012 ± 0.0438 ± 0.0051
	0.840 – 1.200	2.08	0.104	0.399	0.906	0.338	0.868	0.1671 ± 0.0908 ± 0.0175	0.0849 ± 0.0419 ± 0.0064
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.48	0.107	0.462	0.337	0.110	0.811	-0.0457 ± 0.0356 ± 0.0129	-0.0105 ± 0.0178 ± 0.0057
	0.170 – 0.250	2.47	0.103	0.492	0.345	0.211	0.775	0.0095 ± 0.0418 ± 0.0130	0.0100 ± 0.0196 ± 0.0084
	0.250 – 0.310	2.43	0.098	0.520	0.350	0.280	0.743	0.0299 ± 0.0488 ± 0.0087	0.0052 ± 0.0230 ± 0.0080
	0.310 – 0.380	2.36	0.092	0.546	0.349	0.345	0.714	0.0312 ± 0.0410 ± 0.0062	0.0118 ± 0.0213 ± 0.0076
	0.310 – 0.380	2.36	0.092	0.546	0.349	0.345	0.714	0.0312 ± 0.0410 ± 0.0062	0.0118 ± 0.0213 ± 0.0076
	0.380 – 0.520	2.30	0.086	0.576	0.347	0.446	0.678	0.0315 ± 0.0282 ± 0.0058	0.0131 ± 0.0160 ± 0.0074
	0.520 – 0.690	2.28	0.081	0.606	0.359	0.594	0.640	0.0347 ± 0.0316 ± 0.0060	0.0240 ± 0.0190 ± 0.0076
	0.690 – 2.000	2.26	0.076	0.643	0.409	0.846	0.594	0.0173 ± 0.0391 ± 0.0050	0.0095 ± 0.0246 ± 0.0073

Table 88. One-dimensionally binned SFA and CSA amplitudes of the $\cos(\phi_S)$ modulation for π^- as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin		Average kinematics						K^+	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(\phi_S)/\sqrt{2\epsilon(1-\epsilon)} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(\phi_S) \rangle_{\mathrm{L}\perp}$
x	0.023 – 0.046	1.29	0.036	0.704	0.363	0.527	0.524	-0.0716 ± 0.0680 ± 0.0143	-0.0444 ± 0.0450 ± 0.0119
	0.046 – 0.067	1.65	0.056	0.571	0.384	0.436	0.696	0.0714 ± 0.0667 ± 0.0038	0.0395 ± 0.0383 ± 0.0038
	0.067 – 0.082	2.01	0.074	0.524	0.392	0.398	0.743	0.0714 ± 0.0912 ± 0.0035	0.0152 ± 0.0484 ± 0.0022
	0.082 – 0.105	2.39	0.093	0.498	0.401	0.378	0.769	-0.1571 ± 0.0841 ± 0.0018	-0.0756 ± 0.0432 ± 0.0005
	0.082 – 0.105	2.39	0.093	0.498	0.401	0.378	0.769	-0.1571 ± 0.0841 ± 0.0018	-0.0756 ± 0.0432 ± 0.0005
	0.105 – 0.134	2.93	0.118	0.479	0.404	0.366	0.788	0.0198 ± 0.0936 ± 0.0036	0.0389 ± 0.0481 ± 0.0028
	0.134 – 0.186	3.79	0.157	0.468	0.408	0.358	0.801	0.1175 ± 0.0963 ± 0.0084	0.0522 ± 0.0516 ± 0.0034
	0.186 – 0.600	5.86	0.252	0.451	0.410	0.357	0.822	0.1899 ± 0.1161 ± 0.0349	0.1143 ± 0.0655 ± 0.0120
z	0.200 – 0.260	2.46	0.085	0.603	0.228	0.351	0.652	-0.1521 ± 0.0668 ± 0.0025	-0.1085 ± 0.0406 ± 0.0052
	0.260 – 0.320	2.49	0.092	0.569	0.287	0.378	0.688	-0.0165 ± 0.0690 ± 0.0059	-0.0107 ± 0.0394 ± 0.0033
	0.320 – 0.380	2.53	0.097	0.548	0.347	0.403	0.711	0.0027 ± 0.0738 ± 0.0062	-0.0037 ± 0.0401 ± 0.0073
	0.380 – 0.450	2.56	0.101	0.532	0.412	0.425	0.730	0.0482 ± 0.0796 ± 0.0175	0.0303 ± 0.0416 ± 0.0176
	0.450 – 0.520	2.55	0.102	0.522	0.482	0.458	0.739	-0.0006 ± 0.0915 ± 0.0204	-0.0162 ± 0.0458 ± 0.0224
	0.450 – 0.520	2.55	0.102	0.522	0.482	0.458	0.739	-0.0006 ± 0.0915 ± 0.0204	-0.0162 ± 0.0458 ± 0.0224
	0.520 – 0.600	2.54	0.104	0.515	0.556	0.484	0.748	0.1770 ± 0.1008 ± 0.0283	0.0708 ± 0.0485 ± 0.0304
	0.600 – 0.700	2.61	0.108	0.500	0.645	0.506	0.766	0.2878 ± 0.1117 ± 0.0325	0.1540 ± 0.0531 ± 0.0329
	0.700 – 0.760	2.63	0.112	0.474	0.727	0.506	0.797	-0.0209 ± 0.1699 ± 0.0497	-0.0354 ± 0.0805 ± 0.0384
	0.760 – 0.840	2.62	0.116	0.448	0.796	0.501	0.825	-0.2195 ± 0.1669 ± 0.0575	-0.1349 ± 0.0783 ± 0.0403
	0.840 – 1.200	2.47	0.119	0.411	0.903	0.469	0.858	0.0025 ± 0.1760 ± 0.0775	-0.0473 ± 0.0822 ± 0.0473
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.68	0.113	0.468	0.362	0.111	0.807	0.0833 ± 0.0783 ± 0.0013	0.0422 ± 0.0402 ± 0.0016
	0.170 – 0.250	2.66	0.109	0.495	0.372	0.211	0.775	-0.0200 ± 0.0932 ± 0.0178	-0.0079 ± 0.0452 ± 0.0035
	0.250 – 0.310	2.66	0.106	0.517	0.377	0.280	0.750	0.0036 ± 0.1128 ± 0.0214	0.0005 ± 0.0540 ± 0.0028
	0.310 – 0.380	2.56	0.099	0.540	0.381	0.345	0.723	-0.0212 ± 0.1007 ± 0.0170	-0.0191 ± 0.0512 ± 0.0144
	0.310 – 0.380	2.56	0.099	0.540	0.381	0.345	0.723	-0.0212 ± 0.1007 ± 0.0170	-0.0191 ± 0.0512 ± 0.0144
	0.380 – 0.520	2.49	0.093	0.565	0.387	0.447	0.692	-0.0464 ± 0.0685 ± 0.0369	-0.0361 ± 0.0373 ± 0.0207
	0.520 – 0.690	2.41	0.087	0.593	0.402	0.597	0.658	0.0108 ± 0.0712 ± 0.0374	0.0156 ± 0.0411 ± 0.0221
	0.690 – 2.000	2.29	0.076	0.642	0.451	0.867	0.597	0.0184 ± 0.0743 ± 0.0123	0.0052 ± 0.0453 ± 0.0110

Table 89. One-dimensionally binned SFA and CSA amplitudes of the $\cos(\phi_S)$ modulation for K^+ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin		Average kinematics						K^-	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(\phi_S)/\sqrt{2\epsilon(1-\epsilon)} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(\phi_S) \rangle_{\mathrm{L}\perp}$
x	0.023 – 0.046	1.30	0.036	0.711	0.338	0.503	0.513	-0.0586 ± 0.0874 ± 0.0126	-0.0400 ± 0.0577 ± 0.0058
	0.046 – 0.067	1.67	0.056	0.578	0.355	0.417	0.687	-0.0141 ± 0.0918 ± 0.0050	-0.0042 ± 0.0538 ± 0.0047
	0.067 – 0.082	2.04	0.074	0.533	0.361	0.381	0.734	0.0215 ± 0.1316 ± 0.0136	0.0025 ± 0.0714 ± 0.0061
	0.082 – 0.105	2.44	0.093	0.510	0.367	0.367	0.758	0.1799 ± 0.1284 ± 0.0316	0.1050 ± 0.0684 ± 0.0120
	0.082 – 0.105	2.44	0.093	0.510	0.367	0.367	0.758	0.1799 ± 0.1284 ± 0.0316	0.1050 ± 0.0684 ± 0.0120
	0.105 – 0.134	3.01	0.118	0.493	0.366	0.362	0.775	0.2233 ± 0.1473 ± 0.0382	0.1446 ± 0.0794 ± 0.0135
	0.134 – 0.186	3.89	0.157	0.480	0.365	0.356	0.790	0.1255 ± 0.1604 ± 0.0409	0.0545 ± 0.0893 ± 0.0148
	0.186 – 0.600	5.82	0.251	0.451	0.363	0.364	0.821	0.2373 ± 0.2170 ± 0.0345	0.1002 ± 0.1253 ± 0.0115
z	0.200 – 0.260	2.41	0.082	0.616	0.227	0.362	0.636	0.0000 ± 0.0846 ± 0.0270	0.0091 ± 0.0521 ± 0.0179
	0.260 – 0.320	2.41	0.087	0.582	0.287	0.389	0.673	0.1468 ± 0.0929 ± 0.0251	0.0935 ± 0.0543 ± 0.0137
	0.320 – 0.380	2.40	0.091	0.557	0.347	0.419	0.701	0.0082 ± 0.1092 ± 0.0182	0.0082 ± 0.0606 ± 0.0068
	0.380 – 0.450	2.37	0.092	0.542	0.411	0.440	0.718	-0.0233 ± 0.1232 ± 0.0143	-0.0231 ± 0.0652 ± 0.0033
	0.450 – 0.520	2.29	0.091	0.534	0.482	0.460	0.726	0.0745 ± 0.1507 ± 0.0014	0.0995 ± 0.0762 ± 0.0060
	0.450 – 0.520	2.29	0.091	0.534	0.482	0.460	0.726	0.0745 ± 0.1507 ± 0.0014	0.0995 ± 0.0762 ± 0.0060
	0.520 – 0.600	2.34	0.093	0.531	0.556	0.465	0.729	-0.0361 ± 0.1771 ± 0.0222	-0.0191 ± 0.0889 ± 0.0157
	0.600 – 0.700	2.33	0.094	0.520	0.642	0.493	0.744	0.1083 ± 0.2200 ± 0.0310	0.0473 ± 0.1092 ± 0.0191
	0.700 – 0.760	2.28	0.093	0.506	0.726	0.500	0.766	0.3310 ± 0.4395 ± 0.0131	0.1987 ± 0.2108 ± 0.0115
	0.760 – 0.840	2.30	0.096	0.482	0.793	0.464	0.795	0.6840 ± 0.5564 ± 0.0002	0.4773 ± 0.3122 ± 0.0045
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.47	0.103	0.477	0.337	0.111	0.797	0.1161 ± 0.1216 ± 0.0147	0.0509 ± 0.0620 ± 0.0015
	0.170 – 0.250	2.48	0.100	0.513	0.346	0.210	0.756	0.2329 ± 0.1477 ± 0.0199	0.0741 ± 0.0712 ± 0.0031
	0.250 – 0.310	2.48	0.096	0.540	0.346	0.280	0.724	0.0119 ± 0.1772 ± 0.0422	0.0399 ± 0.0867 ± 0.0094
	0.310 – 0.380	2.39	0.089	0.566	0.351	0.345	0.692	-0.0454 ± 0.1529 ± 0.0435	-0.0369 ± 0.0807 ± 0.0156
	0.310 – 0.380	2.39	0.089	0.566	0.351	0.345	0.692	-0.0454 ± 0.1529 ± 0.0435	-0.0369 ± 0.0807 ± 0.0156
	0.380 – 0.520	2.32	0.084	0.592	0.348	0.447	0.661	0.0982 ± 0.0969 ± 0.0370	0.0598 ± 0.0558 ± 0.0193
	0.520 – 0.690	2.31	0.080	0.620	0.358	0.597	0.625	0.0896 ± 0.1026 ± 0.0247	0.0653 ± 0.0624 ± 0.0180
	0.690 – 2.000	2.26	0.073	0.661	0.409	0.856	0.572	0.0294 ± 0.1129 ± 0.0060	0.0345 ± 0.0718 ± 0.0140

Table 90. One-dimensionally binned SFA and CSA amplitudes of the $\cos(\phi_S)$ modulation for K^- as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin		Average kinematics						p	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(\phi_S)/\sqrt{2\epsilon(1-\epsilon)} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(\phi_S) \rangle_{\mathrm{L}\perp}$
x	0.023 – 0.040	1.24	0.033	0.738	0.354	0.550	0.475	-0.1992 ± 0.0892 ± 0.0226	-0.1289 ± 0.0608 ± 0.0125
	0.040 – 0.057	1.54	0.048	0.619	0.395	0.490	0.640	-0.1667 ± 0.0783 ± 0.0065	-0.1045 ± 0.0485 ± 0.0024
	0.057 – 0.075	1.90	0.066	0.561	0.424	0.447	0.706	0.1633 ± 0.0899 ± 0.0095	0.0993 ± 0.0506 ± 0.0035
	0.075 – 0.098	2.36	0.086	0.533	0.439	0.430	0.735	0.0242 ± 0.0962 ± 0.0030	0.0200 ± 0.0517 ± 0.0030
	0.075 – 0.098	2.36	0.086	0.533	0.439	0.430	0.735	0.0242 ± 0.0962 ± 0.0030	0.0200 ± 0.0517 ± 0.0030
	0.098 – 0.136	3.06	0.115	0.514	0.449	0.406	0.757	0.0014 ± 0.0935 ± 0.0059	-0.0121 ± 0.0499 ± 0.0003
	0.136 – 0.185	4.04	0.158	0.496	0.457	0.390	0.777	-0.0811 ± 0.1155 ± 0.0107	-0.0542 ± 0.0631 ± 0.0000
	0.185 – 0.600	6.13	0.257	0.464	0.471	0.383	0.811	0.0989 ± 0.1320 ± 0.0213	0.0484 ± 0.0745 ± 0.0176
z	0.200 – 0.270	2.30	0.062	0.739	0.239	0.477	0.477	-0.0435 ± 0.0920 ± 0.0160	-0.0314 ± 0.0636 ± 0.0106
	0.270 – 0.340	2.57	0.081	0.643	0.306	0.456	0.613	0.0817 ± 0.0747 ± 0.0123	0.0535 ± 0.0480 ± 0.0063
	0.340 – 0.410	2.64	0.093	0.583	0.375	0.443	0.683	-0.0828 ± 0.0772 ± 0.0059	-0.0321 ± 0.0450 ± 0.0006
	0.410 – 0.470	2.66	0.102	0.544	0.439	0.446	0.723	0.0407 ± 0.0918 ± 0.0049	0.0168 ± 0.0491 ± 0.0048
	0.470 – 0.530	2.68	0.109	0.512	0.499	0.435	0.757	-0.0346 ± 0.1045 ± 0.0069	-0.0016 ± 0.0526 ± 0.0068
	0.470 – 0.530	2.68	0.109	0.512	0.499	0.435	0.757	-0.0346 ± 0.1045 ± 0.0069	-0.0016 ± 0.0526 ± 0.0068
	0.530 – 0.610	2.64	0.113	0.485	0.567	0.452	0.781	-0.2847 ± 0.1077 ± 0.0153	-0.1114 ± 0.0523 ± 0.0099
	0.610 – 0.700	2.63	0.119	0.455	0.650	0.463	0.810	-0.1260 ± 0.1359 ± 0.0062	-0.0874 ± 0.0632 ± 0.0013
	0.700 – 0.780	2.57	0.123	0.423	0.735	0.477	0.841	0.2206 ± 0.2028 ± 0.0001	0.0893 ± 0.0933 ± 0.0038
	0.780 – 0.880	2.54	0.130	0.389	0.821	0.490	0.872	0.3025 ± 0.3009 ± 0.0076	0.1469 ± 0.1394 ± 0.0041
	0.880 – 1.200	2.45	0.136	0.353	0.938	0.505	0.900	-0.8215 ± 0.5329 ± 0.0368	-0.3113 ± 0.2399 ± 0.0187
$P_{h\perp}$ [GeV]	0.000 – 0.230	2.88	0.113	0.510	0.435	0.150	0.765	-0.0252 ± 0.0805 ± 0.0043	-0.0099 ± 0.0425 ± 0.0066
	0.230 – 0.340	2.76	0.106	0.543	0.427	0.286	0.723	-0.1124 ± 0.0974 ± 0.0128	-0.0572 ± 0.0479 ± 0.0011
	0.340 – 0.430	2.62	0.097	0.569	0.416	0.385	0.691	0.1552 ± 0.1053 ± 0.0153	0.0535 ± 0.0554 ± 0.0043
	0.430 – 0.520	2.54	0.091	0.590	0.413	0.474	0.666	-0.1714 ± 0.1028 ± 0.0112	-0.0863 ± 0.0577 ± 0.0060
	0.430 – 0.520	2.54	0.091	0.590	0.413	0.474	0.666	-0.1714 ± 0.1028 ± 0.0112	-0.0863 ± 0.0577 ± 0.0060
	0.520 – 0.620	2.44	0.085	0.608	0.406	0.568	0.644	-0.0939 ± 0.0982 ± 0.0014	-0.0634 ± 0.0582 ± 0.0014
	0.620 – 0.740	2.35	0.080	0.620	0.405	0.676	0.628	0.1354 ± 0.1012 ± 0.0127	0.0974 ± 0.0614 ± 0.0057
	0.740 – 2.000	2.31	0.078	0.633	0.432	0.904	0.609	-0.0476 ± 0.0907 ± 0.0240	-0.0166 ± 0.0569 ± 0.0090

Table 91. One-dimensionally binned SFA and CSA amplitudes of the $\cos(\phi_S)$ modulation for p as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin		Average kinematics						$\bar{p}$	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(\phi_S)/\sqrt{2\epsilon(1-\epsilon)} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(\phi_S) \rangle_{\mathrm{L}\perp}$
x	0.023 – 0.040	1.26	0.032	0.759	0.335	0.539	0.442	-0.2280 ± 0.1743 ± 0.0012	-0.1487 ± 0.1178 ± 0.0083
	0.040 – 0.057	1.65	0.048	0.666	0.360	0.492	0.579	-0.2038 ± 0.1879 ± 0.0061	-0.1132 ± 0.1223 ± 0.0086
	0.057 – 0.075	2.12	0.065	0.628	0.372	0.472	0.626	0.0539 ± 0.2202 ± 0.0226	0.0379 ± 0.1387 ± 0.0019
	0.075 – 0.098	2.69	0.085	0.608	0.377	0.450	0.655	-0.4142 ± 0.2692 ± 0.0236	-0.2585 ± 0.1675 ± 0.0047
	0.075 – 0.098	2.69	0.085	0.608	0.377	0.450	0.655	-0.4142 ± 0.2692 ± 0.0236	-0.2585 ± 0.1675 ± 0.0047
	0.098 – 0.136	3.48	0.115	0.588	0.385	0.429	0.678	0.0767 ± 0.2818 ± 0.0083	-0.0194 ± 0.1693 ± 0.0020
	0.136 – 0.185	4.58	0.158	0.562	0.385	0.399	0.712	0.3075 ± 0.3892 ± 0.0123	0.2392 ± 0.2300 ± 0.0013
	0.185 – 0.600	6.60	0.243	0.531	0.406	0.383	0.748	-0.1666 ± 0.4466 ± 0.0312	-0.1312 ± 0.2633 ± 0.0084
z	0.200 – 0.270	2.25	0.060	0.750	0.238	0.471	0.459	-0.3248 ± 0.1823 ± 0.0360	-0.2095 ± 0.1251 ± 0.0298
	0.270 – 0.340	2.48	0.074	0.679	0.304	0.476	0.562	-0.1915 ± 0.1599 ± 0.0543	-0.1246 ± 0.1055 ± 0.0420
	0.340 – 0.410	2.43	0.079	0.634	0.373	0.482	0.618	0.1711 ± 0.1973 ± 0.0616	0.0954 ± 0.1225 ± 0.0367
	0.410 – 0.470	2.43	0.085	0.595	0.437	0.470	0.665	0.0414 ± 0.2805 ± 0.0463	-0.0206 ± 0.1636 ± 0.0155
	0.470 – 0.530	2.41	0.085	0.583	0.498	0.478	0.678	0.1684 ± 0.3502 ± 0.0264	0.0438 ± 0.1966 ± 0.0081
	0.470 – 0.530	2.41	0.085	0.583	0.498	0.478	0.678	0.1684 ± 0.3502 ± 0.0264	0.0438 ± 0.1966 ± 0.0081
	0.530 – 0.610	2.26	0.083	0.567	0.563	0.492	0.698	0.1996 ± 0.4505 ± 0.0127	0.1305 ± 0.2477 ± 0.0373
	0.610 – 0.700	2.40	0.095	0.527	0.645	0.502	0.745	-0.7166 ± 0.5942 ± 0.0336	-0.3133 ± 0.2919 ± 0.0555
$P_{h\perp}$ [GeV]	0.000 – 0.230	2.79	0.097	0.586	0.378	0.151	0.683	-0.3338 ± 0.2538 ± 0.0478	-0.1724 ± 0.1443 ± 0.0438
	0.230 – 0.340	2.53	0.083	0.630	0.364	0.288	0.622	-0.7936 ± 0.3563 ± 0.0073	-0.4417 ± 0.1972 ± 0.0337
	0.340 – 0.430	2.37	0.075	0.652	0.358	0.385	0.592	-0.3912 ± 0.2959 ± 0.0961	-0.2157 ± 0.1809 ± 0.0256
	0.430 – 0.520	2.35	0.073	0.667	0.351	0.475	0.572	0.1887 ± 0.2343 ± 0.1299	0.0915 ± 0.1503 ± 0.0621
	0.430 – 0.520	2.35	0.073	0.667	0.351	0.475	0.572	0.1887 ± 0.2343 ± 0.1299	0.0915 ± 0.1503 ± 0.0621
	0.520 – 0.620	2.30	0.070	0.678	0.355	0.569	0.557	-0.1231 ± 0.2308 ± 0.1008	-0.0706 ± 0.1497 ± 0.0542
	0.620 – 0.740	2.21	0.066	0.687	0.355	0.675	0.544	-0.3311 ± 0.2358 ± 0.0836	-0.1753 ± 0.1538 ± 0.0490
	0.740 – 2.000	2.12	0.062	0.698	0.386	0.886	0.527	0.0922 ± 0.2212 ± 0.0437	0.0545 ± 0.1451 ± 0.0351

Table 92. One-dimensionally binned SFA and CSA amplitudes of the $\cos(\phi_S)$ modulation for $\bar{p}$ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin			Average kinematics						π^+	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(\phi_S)/\sqrt{2\epsilon(1-\epsilon)} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(\phi_S) \rangle_{\mathrm{L}\perp}$
0.023 – 0.072	0.20 – 0.28	0.00 – 0.23	1.46	0.052	0.561	0.236	0.151	0.708	-0.0654 ± 0.0991 ± 0.0005	-0.0654 ± 0.0991 ± 0.0005
		0.23 – 0.36	1.51	0.048	0.632	0.235	0.298	0.619	0.1074 ± 0.0607 ± 0.0021	0.1074 ± 0.0607 ± 0.0021
		0.36 – 0.54	1.54	0.046	0.673	0.237	0.443	0.564	-0.0489 ± 0.0413 ± 0.0038	-0.0489 ± 0.0413 ± 0.0038
		0.54 – 2.00	1.59	0.043	0.730	0.242	0.655	0.483	0.0292 ± 0.0569 ± 0.0062	0.0292 ± 0.0569 ± 0.0062
	0.28 – 0.37	0.00 – 0.23	1.43	0.054	0.525	0.320	0.150	0.750	0.1256 ± 0.1042 ± 0.0013	0.1256 ± 0.1042 ± 0.0013
		0.23 – 0.36	1.48	0.050	0.595	0.320	0.297	0.665	-0.2552 ± 0.2043 ± 0.0036	-0.2552 ± 0.2043 ± 0.0036
		0.36 – 0.54	1.52	0.047	0.640	0.320	0.449	0.607	0.0783 ± 0.0602 ± 0.0022	0.0783 ± 0.0602 ± 0.0022
		0.54 – 2.00	1.56	0.045	0.692	0.323	0.699	0.536	0.0000 ± 0.0518 ± 0.0056	0.0000 ± 0.0518 ± 0.0056
	0.37 – 0.49	0.00 – 0.23	1.40	0.055	0.504	0.422	0.151	0.775	0.0621 ± 0.1109 ± 0.0038	0.0621 ± 0.1109 ± 0.0038
		0.23 – 0.36	1.45	0.051	0.563	0.422	0.298	0.705	0.0212 ± 0.2277 ± 0.0018	0.0212 ± 0.2277 ± 0.0018
		0.36 – 0.54	1.49	0.049	0.609	0.423	0.447	0.648	0.1046 ± 0.1545 ± 0.0046	0.1046 ± 0.1545 ± 0.0046
		0.54 – 2.00	1.54	0.046	0.668	0.425	0.747	0.569	0.0633 ± 0.0559 ± 0.0102	0.0633 ± 0.0559 ± 0.0102
	0.49 – 0.70	0.00 – 0.23	1.38	0.056	0.488	0.579	0.151	0.793	-0.0203 ± 0.1185 ± 0.0025	-0.0203 ± 0.1185 ± 0.0025
		0.23 – 0.36	1.41	0.053	0.529	0.578	0.298	0.745	-0.2129 ± 0.1888 ± 0.0006	-0.2129 ± 0.1888 ± 0.0006
		0.36 – 0.54	1.45	0.051	0.571	0.577	0.448	0.695	-0.0770 ± 0.2387 ± 0.0041	-0.0770 ± 0.2387 ± 0.0041
		0.54 – 2.00	1.51	0.048	0.633	0.577	0.786	0.618	0.0719 ± 0.0754 ± 0.0095	0.0719 ± 0.0754 ± 0.0095
0.072 – 0.098	0.20 – 0.28	0.00 – 0.23	2.10	0.084	0.484	0.239	0.140	0.792	0.0890 ± 0.0985 ± 0.0082	0.0890 ± 0.0985 ± 0.0082
		0.23 – 0.36	2.39	0.084	0.550	0.238	0.295	0.721	-0.0261 ± 0.1303 ± 0.0150	-0.0261 ± 0.1303 ± 0.0150
		0.36 – 0.54	2.47	0.084	0.572	0.239	0.441	0.692	0.1084 ± 0.0863 ± 0.0128	0.1084 ± 0.0863 ± 0.0128
		0.54 – 2.00	2.73	0.084	0.633	0.244	0.643	0.620	-0.0127 ± 0.1412 ± 0.0137	-0.0127 ± 0.1412 ± 0.0137
	0.28 – 0.37	0.00 – 0.23	1.89	0.084	0.434	0.321	0.142	0.834	0.0159 ± 0.1001 ± 0.0065	0.0159 ± 0.1001 ± 0.0065
		0.23 – 0.36	2.14	0.084	0.492	0.322	0.293	0.778	0.2935 ± 0.2004 ± 0.0247	0.2935 ± 0.2004 ± 0.0247
		0.36 – 0.54	2.30	0.084	0.530	0.321	0.444	0.736	-0.1047 ± 0.1168 ± 0.0068	-0.1047 ± 0.1168 ± 0.0068
		0.54 – 2.00	2.51	0.084	0.581	0.325	0.676	0.678	0.0508 ± 0.1163 ± 0.0140	0.0508 ± 0.1163 ± 0.0140
	0.37 – 0.49	0.00 – 0.23	1.83	0.085	0.420	0.423	0.146	0.846	0.1983 ± 0.1129 ± 0.0088	0.1983 ± 0.1129 ± 0.0088
		0.23 – 0.36	1.99	0.085	0.455	0.424	0.293	0.812	-0.2817 ± 0.1669 ± 0.0089	-0.2817 ± 0.1669 ± 0.0089
		0.36 – 0.54	2.18	0.084	0.502	0.425	0.443	0.766	0.0207 ± 0.2111 ± 0.0172	0.0207 ± 0.2111 ± 0.0172
		0.54 – 2.00	2.38	0.084	0.551	0.427	0.719	0.711	-0.0680 ± 0.1162 ± 0.0081	-0.0680 ± 0.1162 ± 0.0081
	0.49 – 0.70	0.00 – 0.23	1.78	0.085	0.407	0.578	0.148	0.857	-0.0213 ± 0.1352 ± 0.0161	-0.0213 ± 0.1352 ± 0.0161
		0.23 – 0.36	1.87	0.085	0.427	0.580	0.295	0.838	-0.0186 ± 0.1465 ± 0.0106	-0.0186 ± 0.1465 ± 0.0106
		0.36 – 0.54	2.02	0.084	0.463	0.583	0.443	0.806	0.0854 ± 0.1948 ± 0.0193	0.0854 ± 0.1948 ± 0.0193
		0.54 – 2.00	2.29	0.084	0.530	0.583	0.754	0.736	0.1053 ± 0.1421 ± 0.0075	0.1053 ± 0.1421 ± 0.0075
0.098 – 0.138	0.20 – 0.28	0.00 – 0.23	2.86	0.116	0.477	0.239	0.139	0.799	-0.0797 ± 0.0917 ± 0.0106	-0.0797 ± 0.0917 ± 0.0106
		0.23 – 0.36	3.18	0.116	0.532	0.239	0.292	0.742	-0.1549 ± 0.1436 ± 0.0094	-0.1549 ± 0.1436 ± 0.0094
		0.36 – 0.54	3.26	0.115	0.547	0.239	0.441	0.721	-0.0272 ± 0.1058 ± 0.0065	-0.0272 ± 0.1058 ± 0.0065
		0.54 – 2.00	3.53	0.115	0.593	0.244	0.638	0.670	-0.0535 ± 0.1948 ± 0.0181	-0.0535 ± 0.1948 ± 0.0181
	0.28 – 0.37	0.00 – 0.23	2.53	0.116	0.422	0.322	0.143	0.843	0.0856 ± 0.0998 ± 0.0138	0.0856 ± 0.0998 ± 0.0138
		0.23 – 0.36	2.81	0.116	0.469	0.323	0.291	0.799	0.0233 ± 0.1483 ± 0.0188	0.0233 ± 0.1483 ± 0.0188
		0.36 – 0.54	3.03	0.116	0.508	0.322	0.442	0.759	-0.1001 ± 0.1407 ± 0.0177	-0.1001 ± 0.1407 ± 0.0177
		0.54 – 2.00	3.21	0.115	0.539	0.325	0.672	0.725	0.0017 ± 0.1459 ± 0.0166	0.0017 ± 0.1459 ± 0.0166
	0.37 – 0.49	0.00 – 0.23	2.41	0.116	0.402	0.423	0.148	0.857	0.0349 ± 0.1177 ± 0.0144	0.0349 ± 0.1177 ± 0.0144
		0.23 – 0.36	2.51	0.116	0.418	0.426	0.293	0.841	0.2751 ± 0.1307 ± 0.0119	0.2751 ± 0.1307 ± 0.0119
		0.36 – 0.54	2.84	0.116	0.475	0.427	0.441	0.791	-0.3644 ± 0.1802 ± 0.0250	-0.3644 ± 0.1802 ± 0.0250
		0.54 – 2.00	3.11	0.116	0.521	0.427	0.716	0.741	-0.1995 ± 0.1367 ± 0.0207	-0.1995 ± 0.1367 ± 0.0207
	0.49 – 0.70	0.00 – 0.23	2.38	0.116	0.398	0.577	0.151	0.862	0.2512 ± 0.1408 ± 0.0165	0.2512 ± 0.1408 ± 0.0165
		0.23 – 0.36	2.40	0.116	0.400	0.579	0.296	0.858	0.0169 ± 0.1381 ± 0.0190	0.0169 ± 0.1381 ± 0.0190
		0.36 – 0.54	2.55	0.116	0.426	0.582	0.441	0.835	0.1635 ± 0.1451 ± 0.0152	0.1635 ± 0.1451 ± 0.0152
		0.54 – 2.00	2.98	0.115	0.500	0.584	0.742	0.765	0.3133 ± 0.1555 ± 0.0107	0.3133 ± 0.1555 ± 0.0107
0.138 – 0.600	0.20 – 0.28	0.00 – 0.23	4.95	0.205	0.467	0.239	0.141	0.811	-0.0216 ± 0.0827 ± 0.0193	-0.0216 ± 0.0827 ± 0.0193
		0.23 – 0.36	5.26	0.214	0.486	0.241	0.290	0.790	-0.1371 ± 0.1142 ± 0.0347	-0.1371 ± 0.1142 ± 0.0347
		0.36 – 0.54	5.21	0.207	0.497	0.240	0.440	0.776	-0.0311 ± 0.1389 ± 0.0347	-0.0311 ± 0.1389 ± 0.0347
		0.54 – 2.00	5.42	0.209	0.515	0.244	0.637	0.759	0.0269 ± 0.3291 ± 0.0451	0.0269 ± 0.3291 ± 0.0451
	0.28 – 0.37	0.00 – 0.23	4.48	0.201	0.428	0.321	0.147	0.841	0.1762 ± 0.0983 ± 0.0253	0.1762 ± 0.0983 ± 0.0253
		0.23 – 0.36	4.64	0.210	0.430	0.323	0.292	0.835	-0.0664 ± 0.1143 ± 0.0370	-0.0664 ± 0.1143 ± 0.0370
		0.36 – 0.54	4.89	0.211	0.457	0.324	0.439	0.810	0.0527 ± 0.1320 ± 0.0395	0.0527 ± 0.1320 ± 0.0395
		0.54 – 2.00	4.93	0.205	0.474	0.325	0.671	0.793	-0.0941 ± 0.1919 ± 0.0385	-0.0941 ± 0.1919 ± 0.0385
	0.37 – 0.49	0.00 – 0.23	4.38	0.201	0.419	0.422	0.150	0.847	-0.0111 ± 0.1180 ± 0.0195	-0.0111 ± 0.1180 ± 0.0195
		0.23 – 0.36	4.38	0.205	0.413	0.424	0.294	0.850	-0.1235 ± 0.1238 ± 0.0268	-0.1235 ± 0.1238 ± 0.0268
		0.36 – 0.54	4.65	0.210	0.432	0.427	0.438	0.832	0.0428 ± 0.1253 ± 0.0421	0.0428 ± 0.1253 ± 0.0421
		0.54 – 2.00	4.84	0.205	0.466	0.427	0.704	0.799	0.1169 ± 0.1572 ± 0.0373	0.1169 ± 0.1572 ± 0.0373
	0.49 – 0.70	0.00 – 0.23	4.33	0.200	0.414	0.575	0.153	0.852	0.1083 ± 0.1489 ± 0.0216	0.1083 ± 0.1489 ± 0.0216
		0.23 – 0.36	4.28	0.200	0.410	0.577	0.296	0.852	0.0062 ± 0.1411 ± 0.0302	0.0062 ± 0.1411 ± 0.0302
		0.36 – 0.54	4.41	0.206	0.413	0.580	0.444	0.848	0.0245 ± 0.1293 ± 0.0388	0.0245 ± 0.1293 ± 0.0388
		0.54 – 2.00	4.82	0.209	0.454	0.587	0.723	0.811	-0.0688 ± 0.1347 ± 0.0468	-0.0688 ± 0.1347 ± 0.0468

Table 93. Three-dimensionally binned SFA and CSA amplitudes of the $\cos(\phi_S)$ modulation for π^+ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin			Average kinematics						π^-	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(\phi_S)/\sqrt{2\epsilon(1-\epsilon)} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(\phi_S) \rangle_{\mathrm{L}\perp}$
0.023 – 0.072	0.20 – 0.28	0.00 – 0.23	1.46	0.052	0.561	0.236	0.152	0.709	-0.0121 ± 0.1124 ± 0.0023	-0.0121 ± 0.1124 ± 0.0023
		0.23 – 0.36	1.51	0.047	0.636	0.234	0.298	0.613	-0.0863 ± 0.0675 ± 0.0008	-0.0863 ± 0.0675 ± 0.0008
		0.36 – 0.54	1.53	0.045	0.674	0.236	0.443	0.561	0.0489 ± 0.0462 ± 0.0006	0.0489 ± 0.0462 ± 0.0006
		0.54 – 2.00	1.58	0.043	0.729	0.241	0.658	0.483	0.0554 ± 0.0624 ± 0.0016	0.0554 ± 0.0624 ± 0.0016
	0.28 – 0.37	0.00 – 0.23	1.43	0.054	0.527	0.320	0.150	0.748	0.0917 ± 0.1180 ± 0.0002	0.0917 ± 0.1180 ± 0.0002
		0.23 – 0.36	1.48	0.049	0.597	0.320	0.296	0.662	-0.2773 ± 0.2398 ± 0.0200	-0.2773 ± 0.2398 ± 0.0200
		0.36 – 0.54	1.50	0.047	0.643	0.319	0.449	0.603	-0.0417 ± 0.0683 ± 0.0001	-0.0417 ± 0.0683 ± 0.0001
		0.54 – 2.00	1.55	0.045	0.692	0.323	0.703	0.536	0.0691 ± 0.0579 ± 0.0057	0.0691 ± 0.0579 ± 0.0057
	0.37 – 0.49	0.00 – 0.23	1.40	0.055	0.505	0.422	0.152	0.774	0.1070 ± 0.1287 ± 0.0154	0.1070 ± 0.1287 ± 0.0154
		0.23 – 0.36	1.45	0.051	0.566	0.423	0.298	0.701	0.0345 ± 0.2640 ± 0.0071	0.0345 ± 0.2640 ± 0.0071
		0.36 – 0.54	1.49	0.048	0.615	0.423	0.448	0.640	-0.2206 ± 0.1688 ± 0.0118	-0.2206 ± 0.1688 ± 0.0118
		0.54 – 2.00	1.53	0.046	0.669	0.424	0.749	0.568	0.0853 ± 0.0660 ± 0.0003	0.0853 ± 0.0660 ± 0.0003
	0.49 – 0.70	0.00 – 0.23	1.37	0.056	0.487	0.579	0.151	0.794	-0.3209 ± 0.1324 ± 0.0048	-0.3209 ± 0.1324 ± 0.0048
		0.23 – 0.36	1.41	0.053	0.532	0.580	0.298	0.743	-0.0037 ± 0.2136 ± 0.0034	-0.0037 ± 0.2136 ± 0.0034
		0.36 – 0.54	1.44	0.050	0.575	0.578	0.446	0.691	0.0751 ± 0.2872 ± 0.0174	0.0751 ± 0.2872 ± 0.0174
		0.54 – 2.00	1.51	0.047	0.638	0.573	0.785	0.611	0.0104 ± 0.0903 ± 0.0054	0.0104 ± 0.0903 ± 0.0054
0.072 – 0.098	0.20 – 0.28	0.00 – 0.23	2.10	0.084	0.484	0.239	0.140	0.791	-0.0194 ± 0.1122 ± 0.0025	-0.0194 ± 0.1122 ± 0.0025
		0.23 – 0.36	2.37	0.084	0.547	0.237	0.294	0.724	0.1426 ± 0.1453 ± 0.0022	0.1426 ± 0.1453 ± 0.0022
		0.36 – 0.54	2.46	0.084	0.569	0.238	0.440	0.695	0.2221 ± 0.0997 ± 0.0086	0.2221 ± 0.0997 ± 0.0086
		0.54 – 2.00	2.72	0.083	0.632	0.244	0.644	0.622	-0.1126 ± 0.1625 ± 0.0005	-0.1126 ± 0.1625 ± 0.0005
	0.28 – 0.37	0.00 – 0.23	1.88	0.084	0.432	0.321	0.142	0.836	0.0109 ± 0.1170 ± 0.0152	0.0109 ± 0.1170 ± 0.0152
		0.23 – 0.36	2.13	0.084	0.490	0.322	0.292	0.779	-0.3299 ± 0.2361 ± 0.0117	-0.3299 ± 0.2361 ± 0.0117
		0.36 – 0.54	2.26	0.084	0.523	0.320	0.445	0.742	0.1508 ± 0.1336 ± 0.0039	0.1508 ± 0.1336 ± 0.0039
		0.54 – 2.00	2.48	0.084	0.575	0.324	0.678	0.685	0.0983 ± 0.1338 ± 0.0074	0.0983 ± 0.1338 ± 0.0074
	0.37 – 0.49	0.00 – 0.23	1.82	0.084	0.418	0.423	0.146	0.847	-0.0098 ± 0.1361 ± 0.0057	-0.0098 ± 0.1361 ± 0.0057
		0.23 – 0.36	1.95	0.084	0.448	0.424	0.292	0.819	0.2382 ± 0.1945 ± 0.0024	0.2382 ± 0.1945 ± 0.0024
		0.36 – 0.54	2.17	0.084	0.502	0.424	0.442	0.767	-0.1231 ± 0.2497 ± 0.0005	-0.1231 ± 0.2497 ± 0.0005
		0.54 – 2.00	2.37	0.084	0.546	0.425	0.724	0.715	-0.0848 ± 0.1346 ± 0.0096	-0.0848 ± 0.1346 ± 0.0096
	0.49 – 0.70	0.00 – 0.23	1.78	0.084	0.407	0.579	0.148	0.856	-0.0699 ± 0.1593 ± 0.0157	-0.0699 ± 0.1593 ± 0.0157
		0.23 – 0.36	1.85	0.084	0.425	0.581	0.295	0.840	0.0714 ± 0.1701 ± 0.0012	0.0714 ± 0.1701 ± 0.0012
		0.36 – 0.54	2.00	0.084	0.461	0.582	0.442	0.808	-0.1337 ± 0.2327 ± 0.0003	-0.1337 ± 0.2327 ± 0.0003
		0.54 – 2.00	2.26	0.084	0.524	0.580	0.751	0.743	-0.2543 ± 0.1782 ± 0.0032	-0.2543 ± 0.1782 ± 0.0032
0.098 – 0.138	0.20 – 0.28	0.00 – 0.23	2.86	0.116	0.477	0.239	0.138	0.799	0.2017 ± 0.1052 ± 0.0114	0.2017 ± 0.1052 ± 0.0114
		0.23 – 0.36	3.17	0.116	0.531	0.238	0.292	0.743	0.0594 ± 0.1641 ± 0.0010	0.0594 ± 0.1641 ± 0.0010
		0.36 – 0.54	3.25	0.115	0.545	0.239	0.442	0.724	-0.1363 ± 0.1250 ± 0.0134	-0.1363 ± 0.1250 ± 0.0134
		0.54 – 2.00	3.54	0.116	0.593	0.244	0.645	0.671	0.3218 ± 0.2364 ± 0.0217	0.3218 ± 0.2364 ± 0.0217
	0.28 – 0.37	0.00 – 0.23	2.52	0.116	0.420	0.321	0.144	0.844	-0.0307 ± 0.1183 ± 0.0126	-0.0307 ± 0.1183 ± 0.0126
		0.23 – 0.36	2.77	0.116	0.462	0.323	0.291	0.806	0.0111 ± 0.1759 ± 0.0102	0.0111 ± 0.1759 ± 0.0102
		0.36 – 0.54	2.98	0.116	0.500	0.322	0.444	0.766	0.1230 ± 0.1576 ± 0.0083	0.1230 ± 0.1576 ± 0.0083
		0.54 – 2.00	3.17	0.116	0.532	0.324	0.675	0.732	0.0880 ± 0.1675 ± 0.0197	0.0880 ± 0.1675 ± 0.0197
	0.37 – 0.49	0.00 – 0.23	2.39	0.116	0.399	0.422	0.148	0.860	-0.0083 ± 0.1452 ± 0.0119	-0.0083 ± 0.1452 ± 0.0119
		0.23 – 0.36	2.48	0.116	0.413	0.425	0.293	0.845	0.0802 ± 0.1608 ± 0.0180	0.0802 ± 0.1608 ± 0.0180
		0.36 – 0.54	2.80	0.116	0.467	0.426	0.441	0.797	-0.1223 ± 0.2176 ± 0.0005	-0.1223 ± 0.2176 ± 0.0005
		0.54 – 2.00	3.00	0.115	0.504	0.424	0.716	0.756	-0.2131 ± 0.1635 ± 0.0085	-0.2131 ± 0.1635 ± 0.0085
	0.49 – 0.70	0.00 – 0.23	2.37	0.116	0.396	0.579	0.150	0.863	0.0231 ± 0.1727 ± 0.0241	0.0231 ± 0.1727 ± 0.0241
		0.23 – 0.36	2.39	0.116	0.399	0.577	0.295	0.859	0.1392 ± 0.1712 ± 0.0201	0.1392 ± 0.1712 ± 0.0201
		0.36 – 0.54	2.55	0.116	0.426	0.583	0.441	0.834	0.0178 ± 0.1830 ± 0.0089	0.0178 ± 0.1830 ± 0.0089
		0.54 – 2.00	2.92	0.115	0.490	0.581	0.747	0.774	-0.0674 ± 0.1899 ± 0.0099	-0.0674 ± 0.1899 ± 0.0099
0.138 – 0.600	0.20 – 0.28	0.00 – 0.23	4.91	0.204	0.467	0.239	0.141	0.811	0.0373 ± 0.0991 ± 0.0157	0.0373 ± 0.0991 ± 0.0157
		0.23 – 0.36	5.22	0.212	0.486	0.240	0.290	0.790	-0.1242 ± 0.1351 ± 0.0261	-0.1242 ± 0.1351 ± 0.0261
		0.36 – 0.54	5.18	0.205	0.499	0.239	0.443	0.775	0.2265 ± 0.1654 ± 0.0160	0.2265 ± 0.1654 ± 0.0160
		0.54 – 2.00	5.40	0.211	0.509	0.243	0.645	0.767	0.3060 ± 0.3967 ± 0.0224	0.3060 ± 0.3967 ± 0.0224
	0.28 – 0.37	0.00 – 0.23	4.41	0.199	0.426	0.321	0.148	0.842	-0.0740 ± 0.1215 ± 0.0228	-0.0740 ± 0.1215 ± 0.0228
		0.23 – 0.36	4.55	0.208	0.426	0.322	0.291	0.839	-0.1209 ± 0.1411 ± 0.0204	-0.1209 ± 0.1411 ± 0.0204
		0.36 – 0.54	4.80	0.211	0.450	0.323	0.440	0.816	0.2187 ± 0.1651 ± 0.0280	0.2187 ± 0.1651 ± 0.0280
		0.54 – 2.00	4.79	0.204	0.464	0.324	0.679	0.802	-0.0267 ± 0.2369 ± 0.0443	-0.0267 ± 0.2369 ± 0.0443
	0.37 – 0.49	0.00 – 0.23	4.26	0.197	0.414	0.422	0.149	0.852	-0.0221 ± 0.1518 ± 0.0233	-0.0221 ± 0.1518 ± 0.0233
		0.23 – 0.36	4.31	0.203	0.410	0.424	0.294	0.852	0.2067 ± 0.1566 ± 0.0299	0.2067 ± 0.1566 ± 0.0299
		0.36 – 0.54	4.59	0.212	0.423	0.425	0.438	0.840	-0.2660 ± 0.1685 ± 0.0390	-0.2660 ± 0.1685 ± 0.0390
		0.54 – 2.00	4.78	0.208	0.453	0.426	0.712	0.809	-0.0120 ± 0.1976 ± 0.0330	-0.0120 ± 0.1976 ± 0.0330
	0.49 – 0.70	0.00 – 0.23	4.25	0.197	0.413	0.574	0.152	0.852	0.0092 ± 0.1915 ± 0.0187	0.0092 ± 0.1915 ± 0.0187
		0.23 – 0.36	4.13	0.198	0.400	0.574	0.295	0.861	0.0696 ± 0.1863 ± 0.0235	0.0696 ± 0.1863 ± 0.0235
		0.36 – 0.54	4.25	0.203	0.405	0.579	0.443	0.855	0.0911 ± 0.1768 ± 0.0354	0.0911 ± 0.1768 ± 0.0354
		0.54 – 2.00	4.67	0.210	0.437	0.581	0.726	0.825	0.3014 ± 0.1854 ± 0.0253	0.3014 ± 0.1854 ± 0.0253

Table 94. Three-dimensionally binned SFA and CSA amplitudes of the $\cos(\phi_S)$ modulation for π^- as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin			Average kinematics						K^+	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(\phi_S)/\sqrt{2\epsilon(1-\epsilon)} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(\phi_S) \rangle_{\mathrm{L}\perp}$
0.023 – 0.072	0.20 – 0.28	0.00 – 0.23	1.48	0.052	0.565	0.239	0.149	0.705	-0.0416 ± 0.3004 ± 0.0409	-0.0416 ± 0.3004 ± 0.0409
		0.23 – 0.36	1.54	0.048	0.638	0.237	0.297	0.612	0.0185 ± 0.2013 ± 0.0322	0.0185 ± 0.2013 ± 0.0322
		0.36 – 0.54	1.55	0.046	0.674	0.239	0.444	0.562	-0.1799 ± 0.1295 ± 0.0284	-0.1799 ± 0.1295 ± 0.0284
		0.54 – 2.00	1.59	0.043	0.734	0.242	0.670	0.476	0.1136 ± 0.1545 ± 0.0218	0.1136 ± 0.1545 ± 0.0218
	0.28 – 0.37	0.00 – 0.23	1.44	0.054	0.529	0.321	0.150	0.747	0.1005 ± 0.2865 ± 0.0270	0.1005 ± 0.2865 ± 0.0270
		0.23 – 0.36	1.51	0.050	0.603	0.322	0.298	0.657	0.5538 ± 0.5931 ± 0.0757	0.5538 ± 0.5931 ± 0.0757
		0.36 – 0.54	1.54	0.047	0.645	0.322	0.448	0.601	0.0706 ± 0.1723 ± 0.0305	0.0706 ± 0.1723 ± 0.0305
		0.54 – 2.00	1.56	0.044	0.701	0.326	0.722	0.523	-0.0404 ± 0.1289 ± 0.0450	-0.0404 ± 0.1289 ± 0.0450
	0.37 – 0.49	0.00 – 0.23	1.43	0.055	0.511	0.422	0.148	0.769	0.2641 ± 0.2506 ± 0.0282	0.2641 ± 0.2506 ± 0.0282
		0.23 – 0.36	1.47	0.052	0.557	0.424	0.297	0.713	0.6268 ± 0.5250 ± 0.0607	0.6268 ± 0.5250 ± 0.0607
		0.36 – 0.54	1.51	0.050	0.608	0.424	0.449	0.651	0.2882 ± 0.3507 ± 0.0540	0.2882 ± 0.3507 ± 0.0540
		0.54 – 2.00	1.56	0.046	0.671	0.428	0.763	0.565	-0.1358 ± 0.1357 ± 0.0373	-0.1358 ± 0.1357 ± 0.0373
	0.49 – 0.70	0.00 – 0.23	1.42	0.057	0.493	0.572	0.150	0.787	0.1022 ± 0.2955 ± 0.0225	0.1022 ± 0.2955 ± 0.0225
		0.23 – 0.36	1.44	0.054	0.534	0.573	0.298	0.740	-0.0440 ± 0.4649 ± 0.0455	-0.0440 ± 0.4649 ± 0.0455
		0.36 – 0.54	1.49	0.051	0.587	0.576	0.452	0.675	0.4081 ± 0.5655 ± 0.0203	0.4081 ± 0.5655 ± 0.0203
		0.54 – 2.00	1.53	0.048	0.637	0.580	0.805	0.612	0.3262 ± 0.1521 ± 0.0180	0.3262 ± 0.1521 ± 0.0180
0.072 – 0.098	0.20 – 0.28	0.00 – 0.23	2.21	0.084	0.508	0.241	0.142	0.770	0.0165 ± 0.3246 ± 0.0211	0.0165 ± 0.3246 ± 0.0211
		0.23 – 0.36	2.43	0.084	0.562	0.240	0.295	0.709	-0.8467 ± 0.3502 ± 0.0033	-0.8467 ± 0.3502 ± 0.0033
		0.36 – 0.54	2.50	0.084	0.578	0.241	0.440	0.683	0.0990 ± 0.2834 ± 0.0345	0.0990 ± 0.2834 ± 0.0345
		0.54 – 2.00	2.72	0.084	0.630	0.244	0.652	0.624	-0.5703 ± 0.4054 ± 0.0342	-0.5703 ± 0.4054 ± 0.0342
	0.28 – 0.37	0.00 – 0.23	1.98	0.084	0.455	0.323	0.142	0.816	-0.2140 ± 0.2568 ± 0.0224	-0.2140 ± 0.2568 ± 0.0224
		0.23 – 0.36	2.21	0.084	0.510	0.324	0.293	0.762	0.4309 ± 0.5284 ± 0.0439	0.4309 ± 0.5284 ± 0.0439
		0.36 – 0.54	2.38	0.084	0.550	0.324	0.446	0.714	0.4262 ± 0.3392 ± 0.0350	0.4262 ± 0.3392 ± 0.0350
		0.54 – 2.00	2.54	0.084	0.587	0.327	0.690	0.669	-0.1125 ± 0.2756 ± 0.0297	-0.1125 ± 0.2756 ± 0.0297
	0.37 – 0.49	0.00 – 0.23	1.88	0.085	0.429	0.423	0.145	0.839	-0.1679 ± 0.2567 ± 0.0230	-0.1679 ± 0.2567 ± 0.0230
		0.23 – 0.36	2.07	0.084	0.475	0.425	0.294	0.795	0.3420 ± 0.4020 ± 0.0163	0.3420 ± 0.4020 ± 0.0163
		0.36 – 0.54	2.23	0.084	0.512	0.427	0.445	0.758	0.2972 ± 0.6175 ± 0.0259	0.2972 ± 0.6175 ± 0.0259
		0.54 – 2.00	2.44	0.084	0.566	0.430	0.735	0.695	0.6166 ± 0.2760 ± 0.0173	0.6166 ± 0.2760 ± 0.0173
	0.49 – 0.70	0.00 – 0.23	1.88	0.085	0.427	0.577	0.150	0.842	-0.4657 ± 0.3133 ± 0.0188	-0.4657 ± 0.3133 ± 0.0188
		0.23 – 0.36	1.94	0.084	0.447	0.575	0.297	0.820	-0.1779 ± 0.3501 ± 0.0073	-0.1779 ± 0.3501 ± 0.0073
		0.36 – 0.54	2.06	0.085	0.470	0.583	0.446	0.798	-0.6094 ± 0.4624 ± 0.0200	-0.6094 ± 0.4624 ± 0.0200
		0.54 – 2.00	2.33	0.084	0.538	0.587	0.768	0.728	0.0954 ± 0.3145 ± 0.0199	0.0954 ± 0.3145 ± 0.0199
0.098 – 0.138	0.20 – 0.28	0.00 – 0.23	2.96	0.116	0.494	0.241	0.139	0.785	0.1631 ± 0.2840 ± 0.0240	0.1631 ± 0.2840 ± 0.0240
		0.23 – 0.36	3.31	0.116	0.554	0.239	0.290	0.718	-0.5686 ± 0.4606 ± 0.0089	-0.5686 ± 0.4606 ± 0.0089
		0.36 – 0.54	3.25	0.115	0.548	0.240	0.443	0.720	-0.4368 ± 0.3271 ± 0.0229	-0.4368 ± 0.3271 ± 0.0229
		0.54 – 2.00	3.53	0.115	0.596	0.245	0.650	0.664	-0.3593 ± 0.5947 ± 0.0457	-0.3593 ± 0.5947 ± 0.0457
	0.28 – 0.37	0.00 – 0.23	2.64	0.116	0.441	0.324	0.142	0.829	-0.3219 ± 0.2507 ± 0.0032	-0.3219 ± 0.2507 ± 0.0032
		0.23 – 0.36	2.91	0.116	0.485	0.326	0.292	0.787	-0.4423 ± 0.4320 ± 0.0112	-0.4423 ± 0.4320 ± 0.0112
		0.36 – 0.54	3.08	0.115	0.519	0.323	0.446	0.746	-0.1869 ± 0.3628 ± 0.0088	-0.1869 ± 0.3628 ± 0.0088
		0.54 – 2.00	3.20	0.116	0.535	0.327	0.682	0.726	0.1230 ± 0.3670 ± 0.0218	0.1230 ± 0.3670 ± 0.0218
	0.37 – 0.49	0.00 – 0.23	2.54	0.116	0.425	0.424	0.148	0.841	-0.0475 ± 0.2628 ± 0.0036	-0.0475 ± 0.2628 ± 0.0036
		0.23 – 0.36	2.66	0.116	0.441	0.427	0.291	0.824	0.3564 ± 0.3204 ± 0.0069	0.3564 ± 0.3204 ± 0.0069
		0.36 – 0.54	3.00	0.117	0.497	0.428	0.442	0.773	-0.6954 ± 0.4432 ± 0.0176	-0.6954 ± 0.4432 ± 0.0176
		0.54 – 2.00	3.21	0.115	0.539	0.428	0.716	0.723	-0.2114 ± 0.3192 ± 0.0251	-0.2114 ± 0.3192 ± 0.0251
	0.49 – 0.70	0.00 – 0.23	2.47	0.116	0.412	0.574	0.150	0.851	0.7133 ± 0.3242 ± 0.0145	0.7133 ± 0.3242 ± 0.0145
		0.23 – 0.36	2.50	0.116	0.418	0.577	0.296	0.845	0.6822 ± 0.3147 ± 0.0158	0.6822 ± 0.3147 ± 0.0158
		0.36 – 0.54	2.70	0.116	0.451	0.583	0.443	0.815	0.1471 ± 0.3456 ± 0.0043	0.1471 ± 0.3456 ± 0.0043
		0.54 – 2.00	3.06	0.115	0.514	0.588	0.752	0.752	0.0327 ± 0.3234 ± 0.0246	0.0327 ± 0.3234 ± 0.0246
0.138 – 0.600	0.20 – 0.28	0.00 – 0.23	5.15	0.207	0.485	0.242	0.138	0.795	0.1045 ± 0.2542 ± 0.0149	0.1045 ± 0.2542 ± 0.0149
		0.23 – 0.36	5.33	0.208	0.505	0.243	0.292	0.773	-0.1608 ± 0.3932 ± 0.0259	-0.1608 ± 0.3932 ± 0.0259
		0.36 – 0.54	5.06	0.196	0.508	0.241	0.445	0.765	0.1199 ± 0.4161 ± 0.0159	0.1199 ± 0.4161 ± 0.0159
		0.54 – 2.00	5.22	0.211	0.493	0.246	0.645	0.779	-0.1329 ± 0.9858 ± 0.0334	-0.1329 ± 0.9858 ± 0.0334
	0.28 – 0.37	0.00 – 0.23	4.76	0.204	0.449	0.323	0.142	0.825	0.0860 ± 0.2344 ± 0.0091	0.0860 ± 0.2344 ± 0.0091
		0.23 – 0.36	5.01	0.211	0.462	0.325	0.289	0.810	0.4358 ± 0.2898 ± 0.0109	0.4358 ± 0.2898 ± 0.0109
		0.36 – 0.54	5.04	0.203	0.488	0.325	0.443	0.783	0.8197 ± 0.3383 ± 0.0233	0.8197 ± 0.3383 ± 0.0233
		0.54 – 2.00	4.69	0.198	0.464	0.327	0.681	0.798	-0.2898 ± 0.4470 ± 0.0356	-0.2898 ± 0.4470 ± 0.0356
	0.37 – 0.49	0.00 – 0.23	4.63	0.204	0.435	0.424	0.150	0.836	-0.1594 ± 0.2623 ± 0.0023	-0.1594 ± 0.2623 ± 0.0023
		0.23 – 0.36	4.62	0.204	0.437	0.425	0.292	0.831	0.0982 ± 0.2668 ± 0.0250	0.0982 ± 0.2668 ± 0.0250
		0.36 – 0.54	4.91	0.210	0.458	0.426	0.439	0.812	0.3361 ± 0.2865 ± 0.0134	0.3361 ± 0.2865 ± 0.0134
		0.54 – 2.00	5.02	0.204	0.483	0.428	0.707	0.784	-0.2738 ± 0.3609 ± 0.0093	-0.2738 ± 0.3609 ± 0.0093
	0.49 – 0.70	0.00 – 0.23	4.55	0.204	0.426	0.576	0.149	0.843	0.5583 ± 0.3266 ± 0.0050	0.5583 ± 0.3266 ± 0.0050
		0.23 – 0.36	4.52	0.206	0.422	0.577	0.296	0.844	0.1969 ± 0.3036 ± 0.0110	0.1969 ± 0.3036 ± 0.0110
		0.36 – 0.54	4.63	0.207	0.435	0.583	0.443	0.831	0.3869 ± 0.2592 ± 0.0402	0.3869 ± 0.2592 ± 0.0402
		0.54 – 2.00	5.06	0.210	0.473	0.589	0.731	0.796	0.6929 ± 0.2879 ± 0.0203	0.6929 ± 0.2879 ± 0.0203

Table 95. Three-dimensionally binned SFA and CSA amplitudes of the $\cos(\phi_S)$ modulation for K^+ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin			Average kinematics						K^-	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(\phi_S)/\sqrt{2\epsilon(1-\epsilon)} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(\phi_S) \rangle_{\mathrm{L}\perp}$
0.023 – 0.072	0.20 – 0.28	0.00 – 0.23	1.48	0.051	0.575	0.236	0.152	0.692	-0.6294 ± 0.3976 ± 0.0525	-0.6294 ± 0.3976 ± 0.0525
		0.23 – 0.36	1.51	0.047	0.646	0.236	0.298	0.601	0.0755 ± 0.2656 ± 0.0138	0.0755 ± 0.2656 ± 0.0138
		0.36 – 0.54	1.54	0.045	0.684	0.237	0.444	0.547	0.0205 ± 0.1622 ± 0.0030	0.0205 ± 0.1622 ± 0.0030
		0.54 – 2.00	1.61	0.043	0.744	0.242	0.666	0.461	0.1407 ± 0.1950 ± 0.0047	0.1407 ± 0.1950 ± 0.0047
	0.28 – 0.37	0.00 – 0.23	1.45	0.053	0.537	0.319	0.151	0.738	0.2874 ± 0.3697 ± 0.0466	0.2874 ± 0.3697 ± 0.0466
		0.23 – 0.36	1.50	0.049	0.608	0.320	0.296	0.650	0.2144 ± 0.6813 ± 0.0192	0.2144 ± 0.6813 ± 0.0192
		0.36 – 0.54	1.51	0.047	0.644	0.319	0.449	0.602	0.3386 ± 0.2238 ± 0.0131	0.3386 ± 0.2238 ± 0.0131
		0.54 – 2.00	1.56	0.044	0.701	0.324	0.724	0.523	-0.1321 ± 0.1751 ± 0.0023	-0.1321 ± 0.1751 ± 0.0023
	0.37 – 0.49	0.00 – 0.23	1.40	0.054	0.513	0.424	0.146	0.768	0.2793 ± 0.3864 ± 0.0238	0.2793 ± 0.3864 ± 0.0238
		0.23 – 0.36	1.48	0.051	0.579	0.422	0.298	0.689	-0.5076 ± 0.8741 ± 0.0042	-0.5076 ± 0.8741 ± 0.0042
		0.36 – 0.54	1.53	0.049	0.622	0.423	0.448	0.633	-0.3782 ± 0.5026 ± 0.0239	-0.3782 ± 0.5026 ± 0.0239
		0.54 – 2.00	1.54	0.045	0.674	0.425	0.770	0.562	-0.0036 ± 0.1964 ± 0.0084	-0.0036 ± 0.1964 ± 0.0084
	0.49 – 0.70	0.00 – 0.23	1.41	0.055	0.508	0.562	0.151	0.771	-0.3468 ± 0.4476 ± 0.0205	-0.3468 ± 0.4476 ± 0.0205
		0.23 – 0.36	1.44	0.052	0.550	0.566	0.298	0.721	-0.2394 ± 0.7078 ± 0.0413	-0.2394 ± 0.7078 ± 0.0413
		0.36 – 0.54	1.49	0.050	0.595	0.572	0.446	0.664	1.0624 ± 0.9013 ± 0.0175	1.0624 ± 0.9013 ± 0.0175
		0.54 – 2.00	1.53	0.046	0.662	0.569	0.799	0.578	-0.1026 ± 0.2572 ± 0.0216	-0.1026 ± 0.2572 ± 0.0216
0.072 – 0.098	0.20 – 0.28	0.00 – 0.23	2.18	0.084	0.503	0.239	0.139	0.775	0.0332 ± 0.4722 ± 0.0379	0.0332 ± 0.4722 ± 0.0379
		0.23 – 0.36	2.46	0.084	0.568	0.237	0.294	0.701	-0.2566 ± 0.5692 ± 0.0442	-0.2566 ± 0.5692 ± 0.0442
		0.36 – 0.54	2.54	0.084	0.586	0.237	0.440	0.677	-0.3746 ± 0.3478 ± 0.0324	-0.3746 ± 0.3478 ± 0.0324
		0.54 – 2.00	2.75	0.084	0.637	0.242	0.648	0.614	0.4425 ± 0.5856 ± 0.0070	0.4425 ± 0.5856 ± 0.0070
	0.28 – 0.37	0.00 – 0.23	1.95	0.084	0.448	0.323	0.138	0.824	0.4166 ± 0.3590 ± 0.0357	0.4166 ± 0.3590 ± 0.0357
		0.23 – 0.36	2.24	0.084	0.518	0.322	0.292	0.752	1.5681 ± 0.8661 ± 0.0077	1.5681 ± 0.8661 ± 0.0077
		0.36 – 0.54	2.40	0.084	0.555	0.321	0.444	0.712	-0.5049 ± 0.4977 ± 0.0418	-0.5049 ± 0.4977 ± 0.0418
		0.54 – 2.00	2.48	0.084	0.573	0.324	0.693	0.689	0.0996 ± 0.4146 ± 0.0379	0.0996 ± 0.4146 ± 0.0379
	0.37 – 0.49	0.00 – 0.23	1.84	0.084	0.426	0.424	0.143	0.842	-0.0743 ± 0.4423 ± 0.0352	-0.0743 ± 0.4423 ± 0.0352
		0.23 – 0.36	2.06	0.084	0.475	0.424	0.294	0.794	-0.3654 ± 0.6382 ± 0.0742	-0.3654 ± 0.6382 ± 0.0742
		0.36 – 0.54	2.27	0.083	0.528	0.424	0.443	0.743	-0.0926 ± 0.7849 ± 0.0203	-0.0926 ± 0.7849 ± 0.0203
		0.54 – 2.00	2.45	0.084	0.566	0.423	0.727	0.695	0.0109 ± 0.4364 ± 0.0171	0.0109 ± 0.4364 ± 0.0171
	0.49 – 0.70	0.00 – 0.23	1.89	0.085	0.431	0.567	0.150	0.837	0.1033 ± 0.5671 ± 0.0326	0.1033 ± 0.5671 ± 0.0326
		0.23 – 0.36	2.00	0.085	0.455	0.570	0.295	0.811	0.3062 ± 0.6118 ± 0.0291	0.3062 ± 0.6118 ± 0.0291
		0.36 – 0.54	2.16	0.084	0.495	0.577	0.440	0.775	1.3648 ± 0.6518 ± 0.0528	1.3648 ± 0.6518 ± 0.0528
		0.54 – 2.00	2.42	0.084	0.556	0.570	0.772	0.707	0.6753 ± 0.5894 ± 0.0015	0.6753 ± 0.5894 ± 0.0015
0.098 – 0.138	0.20 – 0.28	0.00 – 0.23	3.02	0.116	0.505	0.240	0.138	0.774	0.8259 ± 0.3678 ± 0.0377	0.8259 ± 0.3678 ± 0.0377
		0.23 – 0.36	3.26	0.115	0.549	0.241	0.290	0.727	0.3705 ± 0.6602 ± 0.0459	0.3705 ± 0.6602 ± 0.0459
		0.36 – 0.54	3.30	0.115	0.556	0.238	0.444	0.713	-0.4690 ± 0.4523 ± 0.0320	-0.4690 ± 0.4523 ± 0.0320
		0.54 – 2.00	3.61	0.115	0.607	0.243	0.649	0.655	0.5580 ± 0.8715 ± 0.0388	0.5580 ± 0.8715 ± 0.0388
	0.28 – 0.37	0.00 – 0.23	2.69	0.116	0.450	0.323	0.142	0.819	0.3383 ± 0.3972 ± 0.0396	0.3383 ± 0.3972 ± 0.0396
		0.23 – 0.36	2.98	0.116	0.501	0.322	0.294	0.769	-0.3094 ± 0.6330 ± 0.0403	-0.3094 ± 0.6330 ± 0.0403
		0.36 – 0.54	3.06	0.115	0.516	0.324	0.450	0.750	0.2879 ± 0.5727 ± 0.0600	0.2879 ± 0.5727 ± 0.0600
		0.54 – 2.00	3.34	0.116	0.559	0.324	0.694	0.703	-0.1954 ± 0.5438 ± 0.0282	-0.1954 ± 0.5438 ± 0.0282
	0.37 – 0.49	0.00 – 0.23	2.42	0.115	0.408	0.423	0.149	0.854	0.4256 ± 0.4604 ± 0.0294	0.4256 ± 0.4604 ± 0.0294
		0.23 – 0.36	2.69	0.117	0.447	0.427	0.293	0.819	0.2577 ± 0.5197 ± 0.0760	0.2577 ± 0.5197 ± 0.0760
		0.36 – 0.54	2.94	0.116	0.491	0.428	0.442	0.778	1.5249 ± 0.7446 ± 0.0531	1.5249 ± 0.7446 ± 0.0531
		0.54 – 2.00	3.19	0.114	0.540	0.424	0.741	0.723	0.1462 ± 0.5137 ± 0.0577	0.1462 ± 0.5137 ± 0.0577
	0.49 – 0.70	0.00 – 0.23	2.43	0.115	0.407	0.563	0.149	0.854	0.9066 ± 0.6607 ± 0.0243	0.9066 ± 0.6607 ± 0.0243
		0.23 – 0.36	2.47	0.115	0.416	0.572	0.295	0.848	0.2989 ± 0.6283 ± 0.0465	0.2989 ± 0.6283 ± 0.0465
		0.36 – 0.54	2.72	0.116	0.453	0.577	0.435	0.813	0.3607 ± 0.6787 ± 0.0879	0.3607 ± 0.6787 ± 0.0879
		0.54 – 2.00	3.08	0.115	0.517	0.574	0.764	0.750	-0.1688 ± 0.6687 ± 0.0695	-0.1688 ± 0.6687 ± 0.0695
0.138 – 0.600	0.20 – 0.28	0.00 – 0.23	4.98	0.201	0.481	0.241	0.144	0.800	0.8717 ± 0.3494 ± 0.0380	0.8717 ± 0.3494 ± 0.0380
		0.23 – 0.36	5.30	0.206	0.507	0.241	0.290	0.770	0.4622 ± 0.5304 ± 0.0980	0.4622 ± 0.5304 ± 0.0980
		0.36 – 0.54	5.32	0.204	0.518	0.239	0.449	0.757	0.9780 ± 0.6400 ± 0.0479	0.9780 ± 0.6400 ± 0.0479
		0.54 – 2.00	5.44	0.205	0.527	0.245	0.663	0.747	0.4570 ± 1.5020 ± 0.0506	0.4570 ± 1.5020 ± 0.0506
	0.28 – 0.37	0.00 – 0.23	4.71	0.203	0.451	0.322	0.146	0.822	-0.0747 ± 0.3903 ± 0.0168	-0.0747 ± 0.3903 ± 0.0168
		0.23 – 0.36	4.92	0.209	0.462	0.325	0.291	0.809	0.1024 ± 0.4939 ± 0.0910	0.1024 ± 0.4939 ± 0.0910
		0.36 – 0.54	4.90	0.205	0.473	0.325	0.441	0.795	0.4701 ± 0.5858 ± 0.0602	0.4701 ± 0.5858 ± 0.0602
		0.54 – 2.00	5.07	0.200	0.503	0.324	0.691	0.765	-0.3098 ± 0.6891 ± 0.0026	-0.3098 ± 0.6891 ± 0.0026
	0.37 – 0.49	0.00 – 0.23	4.35	0.195	0.430	0.420	0.149	0.839	0.3521 ± 0.5147 ± 0.0200	0.3521 ± 0.5147 ± 0.0200
		0.23 – 0.36	4.49	0.205	0.422	0.423	0.293	0.843	0.4173 ± 0.5430 ± 0.0676	0.4173 ± 0.5430 ± 0.0676
		0.36 – 0.54	4.75	0.207	0.450	0.426	0.437	0.817	-0.1889 ± 0.5123 ± 0.0624	-0.1889 ± 0.5123 ± 0.0624
		0.54 – 2.00	4.87	0.203	0.474	0.425	0.728	0.792	-0.1441 ± 0.5843 ± 0.0189	-0.1441 ± 0.5843 ± 0.0189
	0.49 – 0.70	0.00 – 0.23	4.39	0.196	0.432	0.562	0.154	0.839	-0.6910 ± 0.6573 ± 0.0036	-0.6910 ± 0.6573 ± 0.0036
		0.23 – 0.36	4.35	0.201	0.419	0.571	0.294	0.846	0.0989 ± 0.7841 ± 0.0499	0.0989 ± 0.7841 ± 0.0499
		0.36 – 0.54	4.56	0.207	0.429	0.577	0.440	0.838	0.2278 ± 0.5814 ± 0.0403	0.2278 ± 0.5814 ± 0.0403
		0.54 – 2.00	4.85	0.204	0.470	0.579	0.735	0.796	0.0465 ± 0.6102 ± 0.0793	0.0465 ± 0.6102 ± 0.0793

Table 96. Three-dimensionally binned SFA and CSA amplitudes of the $\cos(\phi_S)$ modulation for K^- as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin			Average kinematics						p	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(\phi_S)/\sqrt{2\epsilon(1-\epsilon)} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(\phi_S) \rangle_{\mathrm{L}\perp}$
0.023 – 0.073	0.20 – 0.34	0.00 – 0.24	1.60	0.048	0.656	0.281	0.167	0.598	0.2566 ± 0.4776 ± 0.0238	0.2566 ± 0.4776 ± 0.0238
		0.24 – 0.40	1.61	0.045	0.698	0.274	0.327	0.535	0.1338 ± 0.1967 ± 0.0002	0.1338 ± 0.1967 ± 0.0002
		0.40 – 0.57	1.60	0.044	0.713	0.271	0.483	0.512	-0.0349 ± 0.1353 ± 0.0062	-0.0349 ± 0.1353 ± 0.0062
		0.57 – 2.00	1.60	0.043	0.734	0.276	0.728	0.480	0.0356 ± 0.1139 ± 0.0244	0.0356 ± 0.1139 ± 0.0244
	0.34 – 0.43	0.00 – 0.24	1.48	0.053	0.544	0.384	0.157	0.736	0.2982 ± 0.2928 ± 0.0205	0.2982 ± 0.2928 ± 0.0205
		0.24 – 0.40	1.51	0.050	0.603	0.384	0.322	0.659	0.4886 ± 0.6038 ± 0.0497	0.4886 ± 0.6038 ± 0.0497
		0.40 – 0.57	1.54	0.049	0.632	0.383	0.483	0.620	-0.2353 ± 0.2702 ± 0.0313	-0.2353 ± 0.2702 ± 0.0313
		0.57 – 2.00	1.54	0.046	0.669	0.384	0.766	0.568	-0.1396 ± 0.1454 ± 0.0381	-0.1396 ± 0.1454 ± 0.0381
	0.43 – 0.52	0.00 – 0.24	1.43	0.056	0.503	0.473	0.159	0.777	-0.2364 ± 0.3101 ± 0.0006	-0.2364 ± 0.3101 ± 0.0006
		0.24 – 0.40	1.47	0.052	0.567	0.471	0.322	0.699	1.2280 ± 0.5928 ± 0.0609	1.2280 ± 0.5928 ± 0.0609
		0.40 – 0.57	1.50	0.050	0.597	0.472	0.481	0.663	0.3871 ± 0.6142 ± 0.0438	0.3871 ± 0.6142 ± 0.0438
		0.57 – 2.00	1.52	0.047	0.641	0.471	0.796	0.604	-0.1417 ± 0.2006 ± 0.0566	-0.1417 ± 0.2006 ± 0.0566
	0.52 – 0.70	0.00 – 0.24	1.40	0.057	0.487	0.588	0.153	0.795	-0.2928 ± 0.3397 ± 0.0139	-0.2928 ± 0.3397 ± 0.0139
		0.24 – 0.40	1.45	0.055	0.527	0.587	0.321	0.747	0.0872 ± 0.4916 ± 0.0062	0.0872 ± 0.4916 ± 0.0062
		0.40 – 0.57	1.46	0.052	0.561	0.589	0.482	0.707	-0.5962 ± 0.7123 ± 0.0232	-0.5962 ± 0.7123 ± 0.0232
		0.57 – 2.00	1.50	0.049	0.607	0.591	0.808	0.649	-0.0741 ± 0.2236 ± 0.0096	-0.0741 ± 0.2236 ± 0.0096
0.073 – 0.107	0.20 – 0.34	0.00 – 0.24	2.83	0.089	0.617	0.293	0.158	0.653	-0.1815 ± 0.3978 ± 0.0065	-0.1815 ± 0.3978 ± 0.0065
		0.24 – 0.40	2.91	0.088	0.638	0.285	0.321	0.624	-0.0981 ± 0.7019 ± 0.0326	-0.0981 ± 0.7019 ± 0.0326
		0.40 – 0.57	3.01	0.088	0.661	0.279	0.481	0.592	-0.4786 ± 0.3001 ± 0.0026	-0.4786 ± 0.3001 ± 0.0026
		0.57 – 2.00	3.03	0.088	0.666	0.282	0.718	0.584	0.3990 ± 0.2800 ± 0.0361	0.3990 ± 0.2800 ± 0.0361
	0.34 – 0.43	0.00 – 0.24	2.34	0.089	0.509	0.385	0.148	0.775	0.3637 ± 0.3031 ± 0.0022	0.3637 ± 0.3031 ± 0.0022
		0.24 – 0.40	2.49	0.088	0.545	0.385	0.317	0.732	0.1782 ± 0.5181 ± 0.0283	0.1782 ± 0.5181 ± 0.0283
		0.40 – 0.57	2.53	0.088	0.558	0.385	0.480	0.717	0.7153 ± 0.4773 ± 0.0117	0.7153 ± 0.4773 ± 0.0117
		0.57 – 2.00	2.63	0.088	0.575	0.385	0.744	0.694	-0.1843 ± 0.2851 ± 0.0192	-0.1843 ± 0.2851 ± 0.0192
	0.43 – 0.52	0.00 – 0.24	2.10	0.089	0.458	0.473	0.155	0.817	0.4486 ± 0.3226 ± 0.0391	0.4486 ± 0.3226 ± 0.0391
		0.24 – 0.40	2.22	0.088	0.485	0.473	0.319	0.789	-0.1410 ± 0.4080 ± 0.0153	-0.1410 ± 0.4080 ± 0.0153
		0.40 – 0.57	2.34	0.088	0.515	0.474	0.477	0.759	-0.1139 ± 0.6143 ± 0.0284	-0.1139 ± 0.6143 ± 0.0284
		0.57 – 2.00	2.45	0.088	0.538	0.472	0.773	0.731	-0.3852 ± 0.3490 ± 0.0497	-0.3852 ± 0.3490 ± 0.0497
	0.52 – 0.70	0.00 – 0.24	1.89	0.089	0.410	0.592	0.156	0.856	-0.0974 ± 0.3147 ± 0.0058	-0.0974 ± 0.3147 ± 0.0058
		0.24 – 0.40	1.95	0.089	0.427	0.593	0.320	0.839	-0.3074 ± 0.3270 ± 0.0118	-0.3074 ± 0.3270 ± 0.0118
		0.40 – 0.57	2.05	0.088	0.450	0.594	0.481	0.817	0.7962 ± 0.4981 ± 0.0012	0.7962 ± 0.4981 ± 0.0012
		0.57 – 2.00	2.24	0.088	0.494	0.598	0.781	0.772	0.1953 ± 0.3483 ± 0.0170	0.1953 ± 0.3483 ± 0.0170
0.107 – 0.157	0.20 – 0.34	0.00 – 0.24	3.97	0.128	0.600	0.295	0.156	0.677	-0.3168 ± 0.3500 ± 0.0037	-0.3168 ± 0.3500 ± 0.0037
		0.24 – 0.40	4.13	0.129	0.622	0.288	0.321	0.648	0.3694 ± 0.5821 ± 0.0028	0.3694 ± 0.5821 ± 0.0028
		0.40 – 0.57	4.27	0.128	0.644	0.283	0.481	0.617	0.2626 ± 0.4217 ± 0.0305	0.2626 ± 0.4217 ± 0.0305
		0.57 – 2.00	4.24	0.127	0.646	0.288	0.719	0.613	0.2167 ± 0.4171 ± 0.0056	0.2167 ± 0.4171 ± 0.0056
	0.34 – 0.43	0.00 – 0.24	3.38	0.130	0.504	0.387	0.152	0.780	-0.1159 ± 0.3002 ± 0.0005	-0.1159 ± 0.3002 ± 0.0005
		0.24 – 0.40	3.48	0.129	0.523	0.388	0.316	0.759	-0.0826 ± 0.3704 ± 0.0221	-0.0826 ± 0.3704 ± 0.0221
		0.40 – 0.57	3.69	0.128	0.555	0.386	0.477	0.722	0.6097 ± 0.5600 ± 0.0320	0.6097 ± 0.5600 ± 0.0320
		0.57 – 2.00	3.71	0.127	0.563	0.385	0.754	0.712	0.4680 ± 0.4009 ± 0.0068	0.4680 ± 0.4009 ± 0.0068
	0.43 – 0.52	0.00 – 0.24	3.06	0.129	0.457	0.474	0.156	0.820	0.0068 ± 0.3354 ± 0.0026	0.0068 ± 0.3354 ± 0.0026
		0.24 – 0.40	3.14	0.130	0.469	0.475	0.317	0.807	-0.0047 ± 0.3629 ± 0.0198	-0.0047 ± 0.3629 ± 0.0198
		0.40 – 0.57	3.29	0.129	0.492	0.472	0.478	0.784	-0.2799 ± 0.5365 ± 0.0007	-0.2799 ± 0.5365 ± 0.0007
		0.57 – 2.00	3.45	0.128	0.524	0.473	0.771	0.747	0.5370 ± 0.4492 ± 0.0069	0.5370 ± 0.4492 ± 0.0069
	0.52 – 0.70	0.00 – 0.24	2.75	0.129	0.413	0.594	0.154	0.852	-0.6239 ± 0.3585 ± 0.0009	-0.6239 ± 0.3585 ± 0.0009
		0.24 – 0.40	2.77	0.129	0.415	0.594	0.320	0.848	-0.5082 ± 0.3432 ± 0.0074	-0.5082 ± 0.3432 ± 0.0074
		0.40 – 0.57	2.85	0.130	0.425	0.602	0.479	0.840	-0.5713 ± 0.4157 ± 0.0476	-0.5713 ± 0.4157 ± 0.0476
		0.57 – 2.00	3.17	0.129	0.476	0.602	0.769	0.788	0.1267 ± 0.4357 ± 0.0321	0.1267 ± 0.4357 ± 0.0321
0.157 – 0.600	0.20 – 0.34	0.00 – 0.24	6.65	0.229	0.566	0.301	0.155	0.717	0.1263 ± 0.4014 ± 0.0189	0.1263 ± 0.4014 ± 0.0189
		0.24 – 0.40	6.49	0.219	0.579	0.298	0.317	0.703	-0.1640 ± 0.4782 ± 0.0105	-0.1640 ± 0.4782 ± 0.0105
		0.40 – 0.57	6.54	0.211	0.608	0.290	0.476	0.664	1.2854 ± 0.5659 ± 0.0088	1.2854 ± 0.5659 ± 0.0088
		0.57 – 2.00	6.59	0.216	0.597	0.292	0.719	0.678	-0.7094 ± 0.8192 ± 0.0033	-0.7094 ± 0.8192 ± 0.0033
	0.34 – 0.43	0.00 – 0.24	5.84	0.231	0.492	0.386	0.154	0.793	0.1575 ± 0.3177 ± 0.0101	0.1575 ± 0.3177 ± 0.0101
		0.24 – 0.40	5.96	0.233	0.499	0.387	0.315	0.786	0.0060 ± 0.3303 ± 0.0015	0.0060 ± 0.3303 ± 0.0015
		0.40 – 0.57	5.97	0.230	0.509	0.389	0.473	0.774	-0.4697 ± 0.4779 ± 0.0368	-0.4697 ± 0.4779 ± 0.0368
		0.57 – 2.00	6.10	0.235	0.511	0.386	0.764	0.771	0.5463 ± 0.5978 ± 0.0870	0.5463 ± 0.5978 ± 0.0870
	0.43 – 0.52	0.00 – 0.24	5.22	0.228	0.444	0.474	0.153	0.833	0.0538 ± 0.3732 ± 0.0038	0.0538 ± 0.3732 ± 0.0038
		0.24 – 0.40	5.38	0.234	0.450	0.473	0.316	0.826	-0.4205 ± 0.3504 ± 0.0367	-0.4205 ± 0.3504 ± 0.0367
		0.40 – 0.57	5.47	0.234	0.458	0.476	0.476	0.818	-0.0917 ± 0.4382 ± 0.0170	-0.0917 ± 0.4382 ± 0.0170
		0.57 – 2.00	5.60	0.237	0.467	0.476	0.756	0.805	0.2097 ± 0.5474 ± 0.0658	0.2097 ± 0.5474 ± 0.0658
	0.52 – 0.70	0.00 – 0.24	4.95	0.223	0.426	0.593	0.156	0.844	0.0222 ± 0.4147 ± 0.0255	0.0222 ± 0.4147 ± 0.0255
		0.24 – 0.40	4.89	0.229	0.411	0.594	0.319	0.855	0.5777 ± 0.3838 ± 0.0483	0.5777 ± 0.3838 ± 0.0483
		0.40 – 0.57	4.88	0.231	0.411	0.599	0.479	0.853	-0.2894 ± 0.3943 ± 0.0503	-0.2894 ± 0.3943 ± 0.0503
		0.57 – 2.00	5.07	0.233	0.427	0.604	0.749	0.837	-0.8037 ± 0.4595 ± 0.1126	-0.8037 ± 0.4595 ± 0.1126

Table 97. Three-dimensionally binned SFA and CSA amplitudes of the $\cos(\phi_S)$ modulation for p as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

5.9 $\sin(2\phi + \phi_S)$ modulation

Kinematic bin		Average kinematics						π^+	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(2\phi + \phi_S)/\epsilon \rangle_{U\perp}$	$2\langle \sin(2\phi + \phi_S) \rangle_{U\perp}$
x	0.023 – 0.046	1.29	0.036	0.702	0.336	0.486	0.526	-0.0203 ± 0.0117 ± 0.0035	-0.0081 ± 0.0065 ± 0.0013
	0.046 – 0.067	1.64	0.056	0.567	0.356	0.408	0.700	-0.0063 ± 0.0090 ± 0.0018	-0.0052 ± 0.0062 ± 0.0014
	0.067 – 0.082	1.98	0.074	0.516	0.366	0.375	0.752	0.0042 ± 0.0109 ± 0.0033	0.0024 ± 0.0081 ± 0.0025
	0.082 – 0.105	2.34	0.093	0.489	0.374	0.358	0.778	-0.0032 ± 0.0096 ± 0.0010	-0.0021 ± 0.0074 ± 0.0014
	0.082 – 0.105	2.34	0.093	0.489	0.374	0.358	0.778	-0.0032 ± 0.0096 ± 0.0010	-0.0021 ± 0.0074 ± 0.0014
	0.105 – 0.134	2.87	0.118	0.469	0.379	0.348	0.796	0.0054 ± 0.0100 ± 0.0019	0.0072 ± 0.0078 ± 0.0025
	0.134 – 0.186	3.69	0.157	0.456	0.379	0.342	0.811	0.0149 ± 0.0098 ± 0.0010	0.0137 ± 0.0078 ± 0.0020
	0.186 – 0.600	5.71	0.254	0.437	0.375	0.343	0.832	0.0155 ± 0.0106 ± 0.0017	0.0137 ± 0.0085 ± 0.0028
z	0.200 – 0.260	2.44	0.087	0.594	0.229	0.344	0.661	0.0048 ± 0.0075 ± 0.0045	0.0035 ± 0.0052 ± 0.0028
	0.260 – 0.320	2.46	0.094	0.556	0.289	0.371	0.702	0.0044 ± 0.0081 ± 0.0057	0.0024 ± 0.0059 ± 0.0041
	0.320 – 0.380	2.45	0.098	0.533	0.349	0.394	0.725	0.0037 ± 0.0091 ± 0.0069	-0.0004 ± 0.0067 ± 0.0051
	0.380 – 0.450	2.45	0.100	0.520	0.413	0.418	0.740	0.0033 ± 0.0098 ± 0.0110	0.0040 ± 0.0073 ± 0.0092
	0.450 – 0.520	2.44	0.101	0.508	0.483	0.441	0.753	0.0104 ± 0.0114 ± 0.0124	0.0095 ± 0.0087 ± 0.0107
	0.450 – 0.520	2.44	0.101	0.508	0.483	0.441	0.753	0.0104 ± 0.0114 ± 0.0124	0.0095 ± 0.0087 ± 0.0107
	0.520 – 0.600	2.43	0.102	0.499	0.558	0.460	0.763	-0.0059 ± 0.0125 ± 0.0129	0.0001 ± 0.0098 ± 0.0120
	0.600 – 0.700	2.41	0.104	0.481	0.647	0.466	0.785	0.0195 ± 0.0133 ± 0.0175	0.0192 ± 0.0106 ± 0.0162
	0.700 – 0.760	2.41	0.107	0.457	0.729	0.453	0.813	0.0069 ± 0.0197 ± 0.0172	0.0100 ± 0.0162 ± 0.0165
	0.760 – 0.840	2.35	0.108	0.434	0.798	0.433	0.837	0.0292 ± 0.0195 ± 0.0163	0.0249 ± 0.0164 ± 0.0152
	0.840 – 1.200	2.31	0.116	0.394	0.916	0.376	0.872	0.0440 ± 0.0172 ± 0.0159	0.0396 ± 0.0149 ± 0.0153
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.56	0.110	0.460	0.341	0.110	0.813	0.0197 ± 0.0084 ± 0.0031	0.0172 ± 0.0069 ± 0.0033
	0.170 – 0.250	2.56	0.108	0.489	0.350	0.211	0.779	0.0060 ± 0.0093 ± 0.0053	0.0057 ± 0.0074 ± 0.0054
	0.250 – 0.310	2.52	0.103	0.514	0.354	0.280	0.750	-0.0067 ± 0.0110 ± 0.0047	-0.0034 ± 0.0085 ± 0.0049
	0.310 – 0.380	2.46	0.097	0.540	0.355	0.345	0.721	0.0093 ± 0.0105 ± 0.0034	0.0085 ± 0.0078 ± 0.0028
	0.310 – 0.380	2.46	0.097	0.540	0.355	0.345	0.721	0.0093 ± 0.0105 ± 0.0034	0.0085 ± 0.0078 ± 0.0028
	0.380 – 0.520	2.39	0.090	0.570	0.356	0.446	0.686	-0.0124 ± 0.0081 ± 0.0032	-0.0079 ± 0.0058 ± 0.0028
	0.520 – 0.690	2.34	0.084	0.601	0.373	0.594	0.648	-0.0027 ± 0.0099 ± 0.0027	-0.0015 ± 0.0066 ± 0.0021
	0.690 – 2.000	2.30	0.076	0.642	0.429	0.849	0.597	0.0073 ± 0.0129 ± 0.0063	0.0012 ± 0.0080 ± 0.0029

Table 98. One-dimensionally binned SFA and CSA amplitudes of the $\sin(2\phi + \phi_S)$ modulation for π^+ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin		Average kinematics						π^0	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(2\phi + \phi_S)/\epsilon \rangle_{U\perp}$	$2\langle \sin(2\phi + \phi_S) \rangle_{U\perp}$
x	0.023 – 0.046	1.30	0.036	0.712	0.325	0.492	0.512	-0.0019 ± 0.0330 ± 0.0070	-0.0065 ± 0.0181 ± 0.0036
	0.046 – 0.067	1.72	0.056	0.597	0.352	0.406	0.665	-0.0100 ± 0.0261 ± 0.0071	-0.0126 ± 0.0174 ± 0.0045
	0.067 – 0.082	2.14	0.074	0.558	0.366	0.374	0.708	-0.0515 ± 0.0326 ± 0.0073	-0.0243 ± 0.0231 ± 0.0047
	0.082 – 0.105	2.58	0.093	0.538	0.372	0.353	0.731	-0.0227 ± 0.0294 ± 0.0076	-0.0220 ± 0.0216 ± 0.0043
	0.082 – 0.105	2.58	0.093	0.538	0.372	0.353	0.731	-0.0227 ± 0.0294 ± 0.0076	-0.0220 ± 0.0216 ± 0.0043
	0.105 – 0.134	3.19	0.118	0.522	0.378	0.338	0.749	-0.0063 ± 0.0321 ± 0.0067	-0.0155 ± 0.0242 ± 0.0035
	0.134 – 0.186	4.10	0.156	0.507	0.380	0.323	0.766	-0.0059 ± 0.0306 ± 0.0074	-0.0069 ± 0.0238 ± 0.0035
	0.186 – 0.600	6.14	0.249	0.479	0.386	0.326	0.797	0.0178 ± 0.0339 ± 0.0083	0.0117 ± 0.0265 ± 0.0049
z	0.200 – 0.260	2.45	0.078	0.648	0.229	0.337	0.598	0.0125 ± 0.0345 ± 0.0124	-0.0080 ± 0.0206 ± 0.0080
	0.260 – 0.320	2.49	0.085	0.609	0.289	0.372	0.645	-0.0041 ± 0.0284 ± 0.0123	0.0063 ± 0.0184 ± 0.0077
	0.320 – 0.380	2.52	0.090	0.581	0.348	0.401	0.679	-0.0448 ± 0.0288 ± 0.0122	-0.0324 ± 0.0195 ± 0.0077
	0.380 – 0.450	2.53	0.095	0.558	0.413	0.427	0.705	0.0152 ± 0.0261 ± 0.0135	0.0067 ± 0.0188 ± 0.0087
	0.450 – 0.520	2.55	0.099	0.537	0.483	0.450	0.728	-0.0139 ± 0.0271 ± 0.0130	-0.0145 ± 0.0204 ± 0.0092
	0.450 – 0.520	2.55	0.099	0.537	0.483	0.450	0.728	-0.0139 ± 0.0271 ± 0.0130	-0.0145 ± 0.0204 ± 0.0092
	0.520 – 0.600	2.57	0.102	0.517	0.557	0.469	0.750	-0.0206 ± 0.0278 ± 0.0139	-0.0113 ± 0.0216 ± 0.0102
	0.600 – 0.700	2.59	0.106	0.496	0.645	0.483	0.774	-0.0491 ± 0.0287 ± 0.0149	-0.0418 ± 0.0231 ± 0.0115
	0.700 – 0.760	2.61	0.112	0.472	0.728	0.494	0.799	0.1158 ± 0.0447 ± 0.0173	0.0884 ± 0.0365 ± 0.0147
	0.760 – 0.840	2.66	0.116	0.457	0.796	0.488	0.815	0.0303 ± 0.0477 ± 0.0160	0.0239 ± 0.0395 ± 0.0127
	0.840 – 1.200	2.56	0.121	0.418	0.908	0.478	0.849	-0.0412 ± 0.0526 ± 0.0123	-0.0344 ± 0.0448 ± 0.0080
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.82	0.114	0.481	0.338	0.111	0.799	-0.0631 ± 0.0314 ± 0.0091	-0.0512 ± 0.0262 ± 0.0053
	0.170 – 0.250	2.69	0.103	0.529	0.340	0.211	0.745	0.0182 ± 0.0315 ± 0.0088	0.0074 ± 0.0258 ± 0.0053
	0.250 – 0.310	2.59	0.095	0.563	0.343	0.280	0.705	-0.0561 ± 0.0351 ± 0.0084	-0.0427 ± 0.0280 ± 0.0041
	0.310 – 0.380	2.49	0.088	0.591	0.347	0.345	0.668	0.0063 ± 0.0339 ± 0.0086	-0.0033 ± 0.0261 ± 0.0048
	0.310 – 0.380	2.49	0.088	0.591	0.347	0.345	0.668	0.0063 ± 0.0339 ± 0.0086	-0.0033 ± 0.0261 ± 0.0048
	0.380 – 0.520	2.39	0.081	0.624	0.353	0.446	0.625	-0.0247 ± 0.0249 ± 0.0086	-0.0385 ± 0.0176 ± 0.0044
	0.520 – 0.690	2.30	0.074	0.652	0.371	0.595	0.587	-0.0084 ± 0.0260 ± 0.0099	0.0032 ± 0.0171 ± 0.0053
	0.690 – 2.000	2.27	0.071	0.675	0.428	0.849	0.554	0.0272 ± 0.0276 ± 0.0084	0.0165 ± 0.0171 ± 0.0041

Table 99. One-dimensionally binned SFA and CSA amplitudes of the $\sin(2\phi + \phi_S)$ modulation for π^0 as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin		Average kinematics						π^-	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(2\phi + \phi_S)/\epsilon \rangle_{U\perp}$	$2\langle \sin(2\phi + \phi_S) \rangle_{U\perp}$
x	0.023 – 0.046	1.29	0.036	0.704	0.330	0.481	0.524	-0.0010 ± 0.0130 ± 0.0056	0.0039 ± 0.0073 ± 0.0017
	0.046 – 0.067	1.64	0.056	0.568	0.350	0.402	0.699	0.0136 ± 0.0102 ± 0.0061	0.0114 ± 0.0071 ± 0.0030
	0.067 – 0.082	1.98	0.074	0.515	0.359	0.369	0.752	-0.0089 ± 0.0127 ± 0.0044	-0.0045 ± 0.0094 ± 0.0023
	0.082 – 0.105	2.33	0.093	0.487	0.366	0.354	0.779	0.0097 ± 0.0113 ± 0.0034	0.0093 ± 0.0087 ± 0.0022
	0.082 – 0.105	2.33	0.093	0.487	0.366	0.354	0.779	0.0097 ± 0.0113 ± 0.0034	0.0093 ± 0.0087 ± 0.0022
	0.105 – 0.134	2.86	0.118	0.468	0.369	0.348	0.797	-0.0146 ± 0.0120 ± 0.0058	-0.0129 ± 0.0094 ± 0.0044
	0.134 – 0.186	3.66	0.156	0.454	0.369	0.342	0.813	-0.0184 ± 0.0120 ± 0.0059	-0.0171 ± 0.0095 ± 0.0058
	0.186 – 0.600	5.66	0.253	0.434	0.364	0.349	0.835	-0.0012 ± 0.0135 ± 0.0167	-0.0051 ± 0.0108 ± 0.0162
z	0.200 – 0.260	2.39	0.084	0.598	0.229	0.350	0.656	0.0056 ± 0.0086 ± 0.0063	0.0100 ± 0.0059 ± 0.0034
	0.260 – 0.320	2.38	0.091	0.559	0.289	0.379	0.698	0.0000 ± 0.0094 ± 0.0091	-0.0004 ± 0.0067 ± 0.0063
	0.320 – 0.380	2.36	0.094	0.536	0.348	0.403	0.721	-0.0092 ± 0.0108 ± 0.0093	-0.0096 ± 0.0079 ± 0.0064
	0.380 – 0.450	2.37	0.097	0.521	0.413	0.422	0.738	-0.0129 ± 0.0118 ± 0.0110	-0.0129 ± 0.0089 ± 0.0088
	0.450 – 0.520	2.35	0.098	0.509	0.483	0.437	0.751	-0.0238 ± 0.0140 ± 0.0126	-0.0206 ± 0.0107 ± 0.0097
	0.450 – 0.520	2.35	0.098	0.509	0.483	0.437	0.751	-0.0238 ± 0.0140 ± 0.0126	-0.0206 ± 0.0107 ± 0.0097
	0.520 – 0.600	2.31	0.098	0.498	0.558	0.449	0.764	-0.0171 ± 0.0156 ± 0.0124	-0.0121 ± 0.0122 ± 0.0100
	0.600 – 0.700	2.27	0.099	0.479	0.646	0.438	0.787	-0.0181 ± 0.0170 ± 0.0147	-0.0128 ± 0.0136 ± 0.0129
	0.700 – 0.760	2.19	0.099	0.452	0.729	0.416	0.818	0.0242 ± 0.0257 ± 0.0131	0.0208 ± 0.0212 ± 0.0112
	0.760 – 0.840	2.15	0.101	0.432	0.798	0.389	0.839	0.0105 ± 0.0251 ± 0.0155	0.0055 ± 0.0211 ± 0.0136
	0.840 – 1.200	2.08	0.104	0.399	0.906	0.338	0.868	0.0245 ± 0.0237 ± 0.0105	0.0213 ± 0.0205 ± 0.0099
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.48	0.107	0.462	0.337	0.110	0.811	-0.0092 ± 0.0100 ± 0.0003	-0.0074 ± 0.0082 ± 0.0004
	0.170 – 0.250	2.47	0.103	0.492	0.345	0.211	0.775	-0.0090 ± 0.0111 ± 0.0070	-0.0060 ± 0.0089 ± 0.0066
	0.250 – 0.310	2.43	0.098	0.520	0.350	0.280	0.743	0.0122 ± 0.0131 ± 0.0103	0.0087 ± 0.0102 ± 0.0093
	0.310 – 0.380	2.36	0.092	0.546	0.349	0.345	0.714	-0.0139 ± 0.0126 ± 0.0095	-0.0117 ± 0.0093 ± 0.0073
	0.310 – 0.380	2.36	0.092	0.546	0.349	0.345	0.714	-0.0139 ± 0.0126 ± 0.0095	-0.0117 ± 0.0093 ± 0.0073
	0.380 – 0.520	2.30	0.086	0.576	0.347	0.446	0.678	-0.0097 ± 0.0097 ± 0.0101	-0.0035 ± 0.0068 ± 0.0067
	0.520 – 0.690	2.28	0.081	0.606	0.359	0.594	0.640	-0.0095 ± 0.0117 ± 0.0103	-0.0055 ± 0.0077 ± 0.0066
	0.690 – 2.000	2.26	0.076	0.643	0.409	0.846	0.594	0.0325 ± 0.0154 ± 0.0174	0.0186 ± 0.0095 ± 0.0105

Table 100. One-dimensionally binned SFA and CSA amplitudes of the $\sin(2\phi + \phi_S)$ modulation for π^- as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin		Average kinematics						K^+	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(2\phi + \phi_S)/\epsilon \rangle_{U_\perp}$	$2\langle \sin(2\phi + \phi_S) \rangle_{U_\perp}$
x	0.023 – 0.046	1.29	0.036	0.704	0.363	0.527	0.524	-0.0076 ± 0.0313 ± 0.0012	-0.0064 ± 0.0172 ± 0.0046
	0.046 – 0.067	1.65	0.056	0.571	0.384	0.436	0.696	0.0576 ± 0.0237 ± 0.0072	0.0432 ± 0.0163 ± 0.0062
	0.067 – 0.082	2.01	0.074	0.524	0.392	0.398	0.743	0.0158 ± 0.0289 ± 0.0089	0.0167 ± 0.0213 ± 0.0069
	0.082 – 0.105	2.39	0.093	0.498	0.401	0.378	0.769	0.0154 ± 0.0252 ± 0.0151	0.0152 ± 0.0193 ± 0.0111
	0.082 – 0.105	2.39	0.093	0.498	0.401	0.378	0.769	0.0154 ± 0.0252 ± 0.0151	0.0152 ± 0.0193 ± 0.0111
	0.105 – 0.134	2.93	0.118	0.479	0.404	0.366	0.788	0.0411 ± 0.0258 ± 0.0184	0.0320 ± 0.0202 ± 0.0120
	0.134 – 0.186	3.79	0.157	0.468	0.408	0.358	0.801	-0.0211 ± 0.0249 ± 0.0155	-0.0124 ± 0.0196 ± 0.0084
	0.186 – 0.600	5.86	0.252	0.451	0.410	0.357	0.822	0.0612 ± 0.0256 ± 0.0024	0.0522 ± 0.0204 ± 0.0027
z	0.200 – 0.260	2.46	0.085	0.603	0.228	0.351	0.652	0.0484 ± 0.0244 ± 0.0053	0.0374 ± 0.0161 ± 0.0030
	0.260 – 0.320	2.49	0.092	0.569	0.287	0.378	0.688	0.0203 ± 0.0231 ± 0.0022	0.0136 ± 0.0161 ± 0.0001
	0.320 – 0.380	2.53	0.097	0.548	0.347	0.403	0.711	0.0325 ± 0.0233 ± 0.0055	0.0193 ± 0.0170 ± 0.0027
	0.380 – 0.450	2.56	0.101	0.532	0.412	0.425	0.730	0.0288 ± 0.0230 ± 0.0064	0.0236 ± 0.0177 ± 0.0030
	0.450 – 0.520	2.55	0.102	0.522	0.482	0.458	0.739	0.0127 ± 0.0258 ± 0.0048	0.0109 ± 0.0200 ± 0.0014
	0.450 – 0.520	2.55	0.102	0.522	0.482	0.458	0.739	0.0127 ± 0.0258 ± 0.0048	0.0109 ± 0.0200 ± 0.0014
	0.520 – 0.600	2.54	0.104	0.515	0.556	0.484	0.748	0.0315 ± 0.0272 ± 0.0065	0.0280 ± 0.0212 ± 0.0014
	0.600 – 0.700	2.61	0.108	0.500	0.645	0.506	0.766	0.0134 ± 0.0291 ± 0.0055	0.0115 ± 0.0228 ± 0.0009
	0.700 – 0.760	2.63	0.112	0.474	0.727	0.506	0.797	0.0366 ± 0.0436 ± 0.0011	0.0219 ± 0.0353 ± 0.0026
	0.760 – 0.840	2.62	0.116	0.448	0.796	0.501	0.825	0.0270 ± 0.0426 ± 0.0003	0.0332 ± 0.0352 ± 0.0043
	0.840 – 1.200	2.47	0.119	0.411	0.903	0.469	0.858	0.0371 ± 0.0440 ± 0.0015	0.0327 ± 0.0377 ± 0.0011
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.68	0.113	0.468	0.362	0.111	0.807	0.0471 ± 0.0219 ± 0.0141	0.0378 ± 0.0178 ± 0.0093
	0.170 – 0.250	2.66	0.109	0.495	0.372	0.211	0.775	0.0051 ± 0.0247 ± 0.0057	0.0069 ± 0.0196 ± 0.0004
	0.250 – 0.310	2.66	0.106	0.517	0.377	0.280	0.750	0.0398 ± 0.0293 ± 0.0119	0.0478 ± 0.0229 ± 0.0038
	0.310 – 0.380	2.56	0.099	0.540	0.381	0.345	0.723	0.0136 ± 0.0281 ± 0.0072	0.0134 ± 0.0211 ± 0.0019
	0.310 – 0.380	2.56	0.099	0.540	0.381	0.345	0.723	0.0136 ± 0.0281 ± 0.0072	0.0134 ± 0.0211 ± 0.0019
	0.380 – 0.520	2.49	0.093	0.565	0.387	0.447	0.692	0.0090 ± 0.0217 ± 0.0132	0.0071 ± 0.0155 ± 0.0063
	0.520 – 0.690	2.41	0.087	0.593	0.402	0.597	0.658	0.0117 ± 0.0246 ± 0.0152	0.0128 ± 0.0167 ± 0.0083
	0.690 – 2.000	2.29	0.076	0.642	0.451	0.867	0.597	0.0507 ± 0.0285 ± 0.0165	0.0232 ± 0.0180 ± 0.0084

Table 101. One-dimensionally binned SFA and CSA amplitudes of the $\sin(2\phi + \phi_S)$ modulation for K^+ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin		Average kinematics						K^-	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(2\phi + \phi_S)/\epsilon \rangle_{U_\perp}$	$2\langle \sin(2\phi + \phi_S) \rangle_{U_\perp}$
x	0.023 – 0.046	1.30	0.036	0.711	0.338	0.503	0.513	0.0420 ± 0.0423 ± 0.0076	0.0394 ± 0.0228 ± 0.0024
	0.046 – 0.067	1.67	0.056	0.578	0.355	0.417	0.687	-0.0434 ± 0.0343 ± 0.0063	-0.0214 ± 0.0233 ± 0.0012
	0.067 – 0.082	2.04	0.074	0.533	0.361	0.381	0.734	-0.0310 ± 0.0430 ± 0.0037	-0.0220 ± 0.0311 ± 0.0006
	0.082 – 0.105	2.44	0.093	0.510	0.367	0.367	0.758	0.0004 ± 0.0384 ± 0.0111	0.0082 ± 0.0287 ± 0.0050
	0.082 – 0.105	2.44	0.093	0.510	0.367	0.367	0.758	0.0004 ± 0.0384 ± 0.0111	0.0082 ± 0.0287 ± 0.0050
	0.105 – 0.134	3.01	0.118	0.493	0.366	0.362	0.775	-0.0330 ± 0.0423 ± 0.0165	-0.0314 ± 0.0323 ± 0.0089
	0.134 – 0.186	3.89	0.157	0.480	0.365	0.356	0.790	0.0061 ± 0.0420 ± 0.0240	0.0080 ± 0.0326 ± 0.0160
	0.186 – 0.600	5.82	0.251	0.451	0.363	0.364	0.821	0.0029 ± 0.0479 ± 0.0473	0.0014 ± 0.0378 ± 0.0371
z	0.200 – 0.260	2.41	0.082	0.616	0.227	0.362	0.636	-0.0188 ± 0.0320 ± 0.0047	0.0044 ± 0.0207 ± 0.0020
	0.260 – 0.320	2.41	0.087	0.582	0.287	0.389	0.673	0.0270 ± 0.0323 ± 0.0105	0.0222 ± 0.0222 ± 0.0040
	0.320 – 0.380	2.40	0.091	0.557	0.347	0.419	0.701	0.0145 ± 0.0354 ± 0.0118	0.0100 ± 0.0254 ± 0.0063
	0.380 – 0.450	2.37	0.092	0.542	0.411	0.440	0.718	-0.0350 ± 0.0379 ± 0.0179	-0.0185 ± 0.0285 ± 0.0098
	0.450 – 0.520	2.29	0.091	0.534	0.482	0.460	0.726	-0.0489 ± 0.0450 ± 0.0155	-0.0304 ± 0.0340 ± 0.0099
	0.450 – 0.520	2.29	0.091	0.534	0.482	0.460	0.726	-0.0489 ± 0.0450 ± 0.0155	-0.0304 ± 0.0340 ± 0.0099
	0.520 – 0.600	2.34	0.093	0.531	0.556	0.465	0.729	-0.0190 ± 0.0515 ± 0.0238	-0.0124 ± 0.0394 ± 0.0174
	0.600 – 0.700	2.33	0.094	0.520	0.642	0.493	0.744	-0.0076 ± 0.0638 ± 0.0237	-0.0112 ± 0.0495 ± 0.0206
	0.700 – 0.760	2.28	0.093	0.506	0.726	0.500	0.766	-0.1146 ± 0.1141 ± 0.0213	-0.1017 ± 0.0894 ± 0.0190
	0.760 – 0.840	2.30	0.096	0.482	0.793	0.464	0.795	-0.3431 ± 0.1613 ± 0.0136	-0.2889 ± 0.1367 ± 0.0128
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.47	0.103	0.477	0.337	0.111	0.797	-0.0604 ± 0.0349 ± 0.0106	-0.0491 ± 0.0282 ± 0.0086
	0.170 – 0.250	2.48	0.100	0.513	0.346	0.210	0.756	-0.0114 ± 0.0392 ± 0.0035	-0.0089 ± 0.0306 ± 0.0030
	0.250 – 0.310	2.48	0.096	0.540	0.346	0.280	0.724	0.0042 ± 0.0468 ± 0.0044	0.0035 ± 0.0357 ± 0.0030
	0.310 – 0.380	2.39	0.089	0.566	0.351	0.345	0.692	-0.0447 ± 0.0456 ± 0.0137	-0.0224 ± 0.0330 ± 0.0091
	0.310 – 0.380	2.39	0.089	0.566	0.351	0.345	0.692	-0.0447 ± 0.0456 ± 0.0137	-0.0224 ± 0.0330 ± 0.0091
	0.380 – 0.520	2.32	0.084	0.592	0.348	0.447	0.661	-0.0136 ± 0.0341 ± 0.0208	-0.0034 ± 0.0233 ± 0.0128
	0.520 – 0.690	2.31	0.080	0.620	0.358	0.597	0.625	0.0695 ± 0.0384 ± 0.0195	0.0504 ± 0.0249 ± 0.0101
	0.690 – 2.000	2.26	0.073	0.661	0.409	0.856	0.572	0.0030 ± 0.0460 ± 0.0319	0.0085 ± 0.0276 ± 0.0146

Table 102. One-dimensionally binned SFA and CSA amplitudes of the $\sin(2\phi + \phi_S)$ modulation for K^- as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin		Average kinematics						p	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(2\phi + \phi_S)/\epsilon \rangle_{U\perp}$	$2\langle \sin(2\phi + \phi_S) \rangle_{U\perp}$
x	0.023 – 0.040	1.24	0.033	0.738	0.354	0.550	0.475	-0.0252 ± 0.0446 ± 0.0051	-0.0182 ± 0.0237 ± 0.0035
	0.040 – 0.057	1.54	0.048	0.619	0.395	0.490	0.640	0.0721 ± 0.0314 ± 0.0049	0.0373 ± 0.0202 ± 0.0030
	0.057 – 0.075	1.90	0.066	0.561	0.424	0.447	0.706	-0.0065 ± 0.0307 ± 0.0024	-0.0132 ± 0.0216 ± 0.0016
	0.075 – 0.098	2.36	0.086	0.533	0.439	0.430	0.735	-0.0195 ± 0.0296 ± 0.0092	-0.0196 ± 0.0219 ± 0.0049
	0.075 – 0.098	2.36	0.086	0.533	0.439	0.430	0.735	-0.0195 ± 0.0296 ± 0.0092	-0.0196 ± 0.0219 ± 0.0049
	0.098 – 0.136	3.06	0.115	0.514	0.449	0.406	0.757	0.0042 ± 0.0266 ± 0.0075	0.0032 ± 0.0204 ± 0.0045
	0.136 – 0.185	4.04	0.158	0.496	0.457	0.390	0.777	0.0149 ± 0.0304 ± 0.0111	0.0137 ± 0.0237 ± 0.0073
	0.185 – 0.600	6.13	0.257	0.464	0.471	0.383	0.811	0.0001 ± 0.0285 ± 0.0020	-0.0019 ± 0.0228 ± 0.0004
z	0.200 – 0.270	2.30	0.062	0.739	0.239	0.477	0.477	-0.0112 ± 0.0438 ± 0.0016	-0.0093 ± 0.0232 ± 0.0005
	0.270 – 0.340	2.57	0.081	0.643	0.306	0.456	0.613	-0.0139 ± 0.0285 ± 0.0145	-0.0111 ± 0.0185 ± 0.0090
	0.340 – 0.410	2.64	0.093	0.583	0.375	0.443	0.683	0.0048 ± 0.0247 ± 0.0207	-0.0051 ± 0.0181 ± 0.0151
	0.410 – 0.470	2.66	0.102	0.544	0.439	0.446	0.723	-0.0254 ± 0.0268 ± 0.0006	-0.0197 ± 0.0206 ± 0.0003
	0.470 – 0.530	2.68	0.109	0.512	0.499	0.435	0.757	0.0486 ± 0.0281 ± 0.0020	0.0350 ± 0.0223 ± 0.0015
	0.470 – 0.530	2.68	0.109	0.512	0.499	0.435	0.757	0.0486 ± 0.0281 ± 0.0020	0.0350 ± 0.0223 ± 0.0015
	0.530 – 0.610	2.64	0.113	0.485	0.567	0.452	0.781	0.0558 ± 0.0286 ± 0.0083	0.0415 ± 0.0229 ± 0.0076
	0.610 – 0.700	2.63	0.119	0.455	0.650	0.463	0.810	-0.0329 ± 0.0345 ± 0.0232	-0.0279 ± 0.0281 ± 0.0187
	0.700 – 0.780	2.57	0.123	0.423	0.735	0.477	0.841	0.0320 ± 0.0517 ± 0.0086	0.0267 ± 0.0435 ± 0.0062
	0.780 – 0.880	2.54	0.130	0.389	0.821	0.490	0.872	0.0014 ± 0.0718 ± 0.0122	0.0082 ± 0.0617 ± 0.0104
	0.880 – 1.200	2.45	0.136	0.353	0.938	0.505	0.900	0.1084 ± 0.1177 ± 0.0147	0.0778 ± 0.1035 ± 0.0118
$P_{h\perp}$ [GeV]	0.000 – 0.230	2.88	0.113	0.510	0.435	0.150	0.765	-0.0171 ± 0.0228 ± 0.0011	-0.0220 ± 0.0180 ± 0.0011
	0.230 – 0.340	2.76	0.106	0.543	0.427	0.286	0.723	0.0276 ± 0.0251 ± 0.0006	0.0089 ± 0.0196 ± 0.0015
	0.340 – 0.430	2.62	0.097	0.569	0.416	0.385	0.691	-0.0284 ± 0.0297 ± 0.0020	-0.0143 ± 0.0221 ± 0.0018
	0.430 – 0.520	2.54	0.091	0.590	0.413	0.474	0.666	0.0572 ± 0.0323 ± 0.0081	0.0373 ± 0.0230 ± 0.0048
	0.430 – 0.520	2.54	0.091	0.590	0.413	0.474	0.666	0.0572 ± 0.0323 ± 0.0081	0.0373 ± 0.0230 ± 0.0048
	0.520 – 0.620	2.44	0.085	0.608	0.406	0.568	0.644	-0.0005 ± 0.0337 ± 0.0121	0.0055 ± 0.0230 ± 0.0054
	0.620 – 0.740	2.35	0.080	0.620	0.405	0.676	0.628	0.0036 ± 0.0371 ± 0.0054	-0.0126 ± 0.0246 ± 0.0012
	0.740 – 2.000	2.31	0.078	0.633	0.432	0.904	0.609	0.0156 ± 0.0354 ± 0.0006	0.0008 ± 0.0226 ± 0.0010

Table 103. One-dimensionally binned SFA and CSA amplitudes of the $\sin(2\phi + \phi_S)$ modulation for p as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin		Average kinematics						$\bar{p}$	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(2\phi + \phi_S)/\epsilon \rangle_{U\perp}$	$2\langle \sin(2\phi + \phi_S) \rangle_{U\perp}$
x	0.023 – 0.040	1.26	0.032	0.759	0.335	0.539	0.442	-0.0538 ± 0.0941 ± 0.0161	0.0035 ± 0.0445 ± 0.0055
	0.040 – 0.057	1.65	0.048	0.666	0.360	0.492	0.579	0.0495 ± 0.0816 ± 0.0434	0.0216 ± 0.0474 ± 0.0248
	0.057 – 0.075	2.12	0.065	0.628	0.372	0.472	0.626	-0.1037 ± 0.0838 ± 0.0299	-0.0882 ± 0.0510 ± 0.0165
	0.075 – 0.098	2.69	0.085	0.608	0.377	0.450	0.655	-0.0441 ± 0.0939 ± 0.0286	-0.0398 ± 0.0613 ± 0.0168
	0.075 – 0.098	2.69	0.085	0.608	0.377	0.450	0.655	-0.0441 ± 0.0939 ± 0.0286	-0.0398 ± 0.0613 ± 0.0168
	0.098 – 0.136	3.48	0.115	0.588	0.385	0.429	0.678	0.1364 ± 0.0963 ± 0.0090	0.0756 ± 0.0638 ± 0.0031
	0.136 – 0.185	4.58	0.158	0.562	0.385	0.399	0.712	-0.0546 ± 0.1137 ± 0.0043	-0.0486 ± 0.0806 ± 0.0002
	0.185 – 0.600	6.60	0.243	0.531	0.406	0.383	0.748	0.0672 ± 0.1146 ± 0.0091	0.0516 ± 0.0857 ± 0.0015
z	0.200 – 0.270	2.25	0.060	0.750	0.238	0.471	0.459	-0.0601 ± 0.0889 ± 0.0268	-0.0175 ± 0.0433 ± 0.0106
	0.270 – 0.340	2.48	0.074	0.679	0.304	0.476	0.562	-0.0311 ± 0.0685 ± 0.0290	-0.0372 ± 0.0392 ± 0.0118
	0.340 – 0.410	2.43	0.079	0.634	0.373	0.482	0.618	-0.0246 ± 0.0712 ± 0.0321	-0.0225 ± 0.0461 ± 0.0150
	0.410 – 0.470	2.43	0.085	0.595	0.437	0.470	0.665	0.1718 ± 0.0930 ± 0.0196	0.1223 ± 0.0661 ± 0.0103
	0.470 – 0.530	2.41	0.085	0.583	0.498	0.478	0.678	0.1207 ± 0.1087 ± 0.0473	0.0745 ± 0.0769 ± 0.0263
	0.470 – 0.530	2.41	0.085	0.583	0.498	0.478	0.678	0.1207 ± 0.1087 ± 0.0473	0.0745 ± 0.0769 ± 0.0263
	0.530 – 0.610	2.26	0.083	0.567	0.563	0.492	0.698	-0.0098 ± 0.1371 ± 0.0196	-0.0167 ± 0.0995 ± 0.0111
	0.610 – 0.700	2.40	0.095	0.527	0.645	0.502	0.745	-0.3050 ± 0.1734 ± 0.0027	-0.1968 ± 0.1310 ± 0.0008
$P_{h\perp}$ [GeV]	0.000 – 0.230	2.79	0.097	0.586	0.378	0.151	0.683	0.0754 ± 0.0807 ± 0.0156	0.0281 ± 0.0587 ± 0.0054
	0.230 – 0.340	2.53	0.083	0.630	0.364	0.288	0.622	-0.1456 ± 0.0913 ± 0.0337	-0.0768 ± 0.0658 ± 0.0180
	0.340 – 0.430	2.37	0.075	0.652	0.358	0.385	0.592	0.0173 ± 0.0995 ± 0.0437	-0.0042 ± 0.0600 ± 0.0235
	0.430 – 0.520	2.35	0.073	0.667	0.351	0.475	0.572	0.0108 ± 0.0937 ± 0.0283	0.0308 ± 0.0554 ± 0.0100
	0.430 – 0.520	2.35	0.073	0.667	0.351	0.475	0.572	0.0108 ± 0.0937 ± 0.0283	0.0308 ± 0.0554 ± 0.0100
	0.520 – 0.620	2.30	0.070	0.678	0.355	0.569	0.557	-0.1806 ± 0.0983 ± 0.0338	-0.1080 ± 0.0563 ± 0.0125
	0.620 – 0.740	2.21	0.066	0.687	0.355	0.675	0.544	0.1368 ± 0.1009 ± 0.0297	0.0505 ± 0.0559 ± 0.0107
	0.740 – 2.000	2.12	0.062	0.698	0.386	0.886	0.527	0.0339 ± 0.1042 ± 0.0229	0.0141 ± 0.0555 ± 0.0054

Table 104. One-dimensionally binned SFA and CSA amplitudes of the $\sin(2\phi + \phi_S)$ modulation for $\bar{p}$ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin			Average kinematics						π^+	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(2\phi+\phi_S)/\epsilon \rangle_{U\perp}$	$2\langle \sin(2\phi+\phi_S) \rangle_{U\perp}$
0.023 – 0.072	0.20 – 0.28	0.00 – 0.23	1.46	0.052	0.561	0.236	0.151	0.708	-0.0169 ± 0.0288 ± 0.0084	-0.0169 ± 0.0288 ± 0.0084
		0.23 – 0.36	1.51	0.048	0.632	0.235	0.298	0.619	-0.0070 ± 0.0221 ± 0.0001	-0.0070 ± 0.0221 ± 0.0001
		0.36 – 0.54	1.54	0.046	0.673	0.237	0.443	0.564	-0.0067 ± 0.0180 ± 0.0003	-0.0067 ± 0.0180 ± 0.0003
		0.54 – 2.00	1.59	0.043	0.730	0.242	0.655	0.483	-0.0123 ± 0.0280 ± 0.0046	-0.0123 ± 0.0280 ± 0.0046
	0.28 – 0.37	0.00 – 0.23	1.43	0.054	0.525	0.320	0.150	0.750	0.0116 ± 0.0334 ± 0.0010	0.0116 ± 0.0334 ± 0.0010
		0.23 – 0.36	1.48	0.050	0.595	0.320	0.297	0.665	-0.0322 ± 0.0434 ± 0.0077	-0.0322 ± 0.0434 ± 0.0077
		0.36 – 0.54	1.52	0.047	0.640	0.320	0.449	0.607	-0.0067 ± 0.0233 ± 0.0019	-0.0067 ± 0.0233 ± 0.0019
		0.54 – 2.00	1.56	0.045	0.692	0.323	0.699	0.536	-0.0431 ± 0.0238 ± 0.0012	-0.0431 ± 0.0238 ± 0.0012
	0.37 – 0.49	0.00 – 0.23	1.40	0.055	0.504	0.422	0.151	0.775	-0.0177 ± 0.0384 ± 0.0012	-0.0177 ± 0.0384 ± 0.0012
		0.23 – 0.36	1.45	0.051	0.563	0.422	0.298	0.705	-0.0782 ± 0.0533 ± 0.0067	-0.0782 ± 0.0533 ± 0.0067
		0.36 – 0.54	1.49	0.049	0.609	0.423	0.447	0.648	0.0123 ± 0.0386 ± 0.0065	0.0123 ± 0.0386 ± 0.0065
		0.54 – 2.00	1.54	0.046	0.668	0.425	0.747	0.569	0.0145 ± 0.0237 ± 0.0009	0.0145 ± 0.0237 ± 0.0009
	0.49 – 0.70	0.00 – 0.23	1.38	0.056	0.488	0.579	0.151	0.793	-0.0587 ± 0.0434 ± 0.0105	-0.0587 ± 0.0434 ± 0.0105
		0.23 – 0.36	1.41	0.053	0.529	0.578	0.298	0.745	0.0135 ± 0.0529 ± 0.0087	0.0135 ± 0.0529 ± 0.0087
		0.36 – 0.54	1.45	0.051	0.571	0.577	0.448	0.695	-0.0394 ± 0.0520 ± 0.0009	-0.0394 ± 0.0520 ± 0.0009
		0.54 – 2.00	1.51	0.048	0.633	0.577	0.786	0.618	-0.0080 ± 0.0277 ± 0.0001	-0.0080 ± 0.0277 ± 0.0001
0.072 – 0.098	0.20 – 0.28	0.00 – 0.23	2.10	0.084	0.484	0.239	0.140	0.792	0.0107 ± 0.0284 ± 0.0066	0.0107 ± 0.0284 ± 0.0066
		0.23 – 0.36	2.39	0.084	0.550	0.238	0.295	0.721	0.0068 ± 0.0342 ± 0.0066	0.0068 ± 0.0342 ± 0.0066
		0.36 – 0.54	2.47	0.084	0.572	0.239	0.441	0.692	-0.0282 ± 0.0296 ± 0.0012	-0.0282 ± 0.0296 ± 0.0012
		0.54 – 2.00	2.73	0.084	0.633	0.244	0.643	0.620	-0.0283 ± 0.0540 ± 0.0102	-0.0283 ± 0.0540 ± 0.0102
	0.28 – 0.37	0.00 – 0.23	1.89	0.084	0.434	0.321	0.142	0.834	0.0401 ± 0.0295 ± 0.0049	0.0401 ± 0.0295 ± 0.0049
		0.23 – 0.36	2.14	0.084	0.492	0.322	0.293	0.778	-0.0483 ± 0.0446 ± 0.0052	-0.0483 ± 0.0446 ± 0.0052
		0.36 – 0.54	2.30	0.084	0.530	0.321	0.444	0.736	-0.0226 ± 0.0342 ± 0.0076	-0.0226 ± 0.0342 ± 0.0076
		0.54 – 2.00	2.51	0.084	0.581	0.325	0.676	0.678	0.0393 ± 0.0404 ± 0.0012	0.0393 ± 0.0404 ± 0.0012
	0.37 – 0.49	0.00 – 0.23	1.83	0.085	0.420	0.423	0.146	0.846	-0.0200 ± 0.0334 ± 0.0015	-0.0200 ± 0.0334 ± 0.0015
		0.23 – 0.36	1.99	0.085	0.455	0.424	0.293	0.812	-0.0289 ± 0.0433 ± 0.0030	-0.0289 ± 0.0433 ± 0.0030
		0.36 – 0.54	2.18	0.084	0.502	0.425	0.443	0.766	0.0168 ± 0.0457 ± 0.0096	0.0168 ± 0.0457 ± 0.0096
		0.54 – 2.00	2.38	0.084	0.551	0.427	0.719	0.711	0.0139 ± 0.0376 ± 0.0073	0.0139 ± 0.0376 ± 0.0073
	0.49 – 0.70	0.00 – 0.23	1.78	0.085	0.407	0.578	0.148	0.857	-0.0838 ± 0.0389 ± 0.0039	-0.0838 ± 0.0389 ± 0.0039
		0.23 – 0.36	1.87	0.085	0.427	0.580	0.295	0.838	0.0439 ± 0.0421 ± 0.0051	0.0439 ± 0.0421 ± 0.0051
		0.36 – 0.54	2.02	0.084	0.463	0.583	0.443	0.806	-0.0300 ± 0.0474 ± 0.0052	-0.0300 ± 0.0474 ± 0.0052
		0.54 – 2.00	2.29	0.084	0.530	0.583	0.754	0.736	0.0287 ± 0.0393 ± 0.0055	0.0287 ± 0.0393 ± 0.0055
0.098 – 0.138	0.20 – 0.28	0.00 – 0.23	2.86	0.116	0.477	0.239	0.139	0.799	0.0301 ± 0.0256 ± 0.0011	0.0301 ± 0.0256 ± 0.0011
		0.23 – 0.36	3.18	0.116	0.532	0.239	0.292	0.742	0.0950 ± 0.0361 ± 0.0077	0.0950 ± 0.0361 ± 0.0077
		0.36 – 0.54	3.26	0.115	0.547	0.239	0.441	0.721	0.0142 ± 0.0325 ± 0.0036	0.0142 ± 0.0325 ± 0.0036
		0.54 – 2.00	3.53	0.115	0.593	0.244	0.638	0.670	-0.0650 ± 0.0613 ± 0.0033	-0.0650 ± 0.0613 ± 0.0033
	0.28 – 0.37	0.00 – 0.23	2.53	0.116	0.422	0.322	0.143	0.843	0.0337 ± 0.0261 ± 0.0017	0.0337 ± 0.0261 ± 0.0017
		0.23 – 0.36	2.81	0.116	0.469	0.323	0.291	0.799	-0.0206 ± 0.0383 ± 0.0003	-0.0206 ± 0.0383 ± 0.0003
		0.36 – 0.54	3.03	0.116	0.508	0.322	0.442	0.759	-0.0647 ± 0.0367 ± 0.0046	-0.0647 ± 0.0367 ± 0.0046
		0.54 – 2.00	3.21	0.115	0.539	0.325	0.672	0.725	0.0100 ± 0.0438 ± 0.0030	0.0100 ± 0.0438 ± 0.0030
	0.37 – 0.49	0.00 – 0.23	2.41	0.116	0.402	0.423	0.148	0.857	-0.0060 ± 0.0299 ± 0.0005	-0.0060 ± 0.0299 ± 0.0005
		0.23 – 0.36	2.51	0.116	0.418	0.426	0.293	0.841	0.0183 ± 0.0338 ± 0.0002	0.0183 ± 0.0338 ± 0.0002
		0.36 – 0.54	2.84	0.116	0.475	0.427	0.441	0.791	-0.0013 ± 0.0416 ± 0.0021	-0.0013 ± 0.0416 ± 0.0021
		0.54 – 2.00	3.11	0.116	0.521	0.427	0.716	0.741	-0.0008 ± 0.0401 ± 0.0020	-0.0008 ± 0.0401 ± 0.0020
	0.49 – 0.70	0.00 – 0.23	2.38	0.116	0.398	0.577	0.151	0.862	-0.0147 ± 0.0348 ± 0.0002	-0.0147 ± 0.0348 ± 0.0002
		0.23 – 0.36	2.40	0.116	0.400	0.579	0.296	0.858	-0.0268 ± 0.0347 ± 0.0036	-0.0268 ± 0.0347 ± 0.0036
		0.36 – 0.54	2.55	0.116	0.426	0.582	0.441	0.835	-0.0015 ± 0.0368 ± 0.0021	-0.0015 ± 0.0368 ± 0.0021
		0.54 – 2.00	2.98	0.115	0.500	0.584	0.742	0.765	-0.0176 ± 0.0396 ± 0.0107	-0.0176 ± 0.0396 ± 0.0107
0.138 – 0.600	0.20 – 0.28	0.00 – 0.23	4.95	0.205	0.467	0.239	0.141	0.811	0.0158 ± 0.0204 ± 0.0029	0.0158 ± 0.0204 ± 0.0029
		0.23 – 0.36	5.26	0.214	0.486	0.241	0.290	0.790	0.0222 ± 0.0297 ± 0.0016	0.0222 ± 0.0297 ± 0.0016
		0.36 – 0.54	5.21	0.207	0.497	0.240	0.440	0.776	-0.0026 ± 0.0357 ± 0.0037	-0.0026 ± 0.0357 ± 0.0037
		0.54 – 2.00	5.42	0.209	0.515	0.244	0.637	0.759	-0.0976 ± 0.0819 ± 0.0007	-0.0976 ± 0.0819 ± 0.0007
	0.28 – 0.37	0.00 – 0.23	4.48	0.201	0.428	0.321	0.147	0.841	0.0177 ± 0.0217 ± 0.0013	0.0177 ± 0.0217 ± 0.0013
		0.23 – 0.36	4.64	0.210	0.430	0.323	0.292	0.835	0.0319 ± 0.0273 ± 0.0014	0.0319 ± 0.0273 ± 0.0014
		0.36 – 0.54	4.89	0.211	0.457	0.324	0.439	0.810	-0.0471 ± 0.0332 ± 0.0002	-0.0471 ± 0.0332 ± 0.0002
		0.54 – 2.00	4.93	0.205	0.474	0.325	0.671	0.793	-0.0271 ± 0.0483 ± 0.0033	-0.0271 ± 0.0483 ± 0.0033
	0.37 – 0.49	0.00 – 0.23	4.38	0.201	0.419	0.422	0.150	0.847	0.0386 ± 0.0250 ± 0.0013	0.0386 ± 0.0250 ± 0.0013
		0.23 – 0.36	4.38	0.205	0.413	0.424	0.294	0.850	-0.0055 ± 0.0277 ± 0.0021	-0.0055 ± 0.0277 ± 0.0021
		0.36 – 0.54	4.65	0.210	0.432	0.427	0.438	0.832	0.0280 ± 0.0311 ± 0.0032	0.0280 ± 0.0311 ± 0.0032
		0.54 – 2.00	4.84	0.205	0.466	0.427	0.704	0.799	0.0570 ± 0.0400 ± 0.0041	0.0570 ± 0.0400 ± 0.0041
	0.49 – 0.70	0.00 – 0.23	4.33	0.200	0.414	0.575	0.153	0.852	-0.0176 ± 0.0302 ± 0.0045	-0.0176 ± 0.0302 ± 0.0045
		0.23 – 0.36	4.28	0.200	0.410	0.577	0.296	0.852	0.0468 ± 0.0306 ± 0.0022	0.0468 ± 0.0306 ± 0.0022
		0.36 – 0.54	4.41	0.206	0.413	0.580	0.444	0.848	-0.0351 ± 0.0293 ± 0.0029	-0.0351 ± 0.0293 ± 0.0029
		0.54 – 2.00	4.82	0.209	0.454	0.587	0.723	0.811	0.0761 ± 0.0338 ± 0.0021	0.0761 ± 0.0338 ± 0.0021

Table 105. Three-dimensionally binned SFA and CSA amplitudes of the $\sin(2\phi + \phi_S)$ modulation for π^+ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin			Average kinematics						π^-	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(2\phi+\phi_S)/\epsilon \rangle_{U\perp}$	$2\langle \sin(2\phi+\phi_S) \rangle_{U\perp}$
0.023 – 0.072	0.20 – 0.28	0.00 – 0.23	1.46	0.052	0.561	0.236	0.152	0.709	0.0445 ± 0.0330 ± 0.0020	0.0445 ± 0.0330 ± 0.0020
		0.23 – 0.36	1.51	0.047	0.636	0.234	0.298	0.613	0.0277 ± 0.0247 ± 0.0013	0.0277 ± 0.0247 ± 0.0013
		0.36 – 0.54	1.53	0.045	0.674	0.236	0.443	0.561	0.0234 ± 0.0204 ± 0.0052	0.0234 ± 0.0204 ± 0.0052
		0.54 – 2.00	1.58	0.043	0.729	0.241	0.658	0.483	0.0475 ± 0.0311 ± 0.0032	0.0475 ± 0.0311 ± 0.0032
	0.28 – 0.37	0.00 – 0.23	1.43	0.054	0.527	0.320	0.150	0.748	0.0252 ± 0.0386 ± 0.0036	0.0252 ± 0.0386 ± 0.0036
		0.23 – 0.36	1.48	0.049	0.597	0.320	0.296	0.662	-0.0058 ± 0.0503 ± 0.0035	-0.0058 ± 0.0503 ± 0.0035
		0.36 – 0.54	1.50	0.047	0.643	0.319	0.449	0.603	-0.0169 ± 0.0265 ± 0.0052	-0.0169 ± 0.0265 ± 0.0052
		0.54 – 2.00	1.55	0.045	0.692	0.323	0.703	0.536	0.0016 ± 0.0262 ± 0.0062	0.0016 ± 0.0262 ± 0.0062
	0.37 – 0.49	0.00 – 0.23	1.40	0.055	0.505	0.422	0.152	0.774	-0.0431 ± 0.0447 ± 0.0025	-0.0431 ± 0.0447 ± 0.0025
		0.23 – 0.36	1.45	0.051	0.566	0.423	0.298	0.701	0.0263 ± 0.0620 ± 0.0051	0.0263 ± 0.0620 ± 0.0051
		0.36 – 0.54	1.49	0.048	0.615	0.423	0.448	0.640	0.0030 ± 0.0429 ± 0.0024	0.0030 ± 0.0429 ± 0.0024
		0.54 – 2.00	1.53	0.046	0.669	0.424	0.749	0.568	-0.0155 ± 0.0281 ± 0.0076	-0.0155 ± 0.0281 ± 0.0076
	0.49 – 0.70	0.00 – 0.23	1.37	0.056	0.487	0.579	0.151	0.794	0.0574 ± 0.0477 ± 0.0072	0.0574 ± 0.0477 ± 0.0072
		0.23 – 0.36	1.41	0.053	0.532	0.580	0.298	0.743	-0.0095 ± 0.0609 ± 0.0078	-0.0095 ± 0.0609 ± 0.0078
		0.36 – 0.54	1.44	0.050	0.575	0.578	0.446	0.691	-0.0679 ± 0.0634 ± 0.0098	-0.0679 ± 0.0634 ± 0.0098
		0.54 – 2.00	1.51	0.047	0.638	0.573	0.785	0.611	-0.0127 ± 0.0342 ± 0.0150	-0.0127 ± 0.0342 ± 0.0150
0.072 – 0.098	0.20 – 0.28	0.00 – 0.23	2.10	0.084	0.484	0.239	0.140	0.791	0.0203 ± 0.0325 ± 0.0052	0.0203 ± 0.0325 ± 0.0052
		0.23 – 0.36	2.37	0.084	0.547	0.237	0.294	0.724	0.0523 ± 0.0382 ± 0.0072	0.0523 ± 0.0382 ± 0.0072
		0.36 – 0.54	2.46	0.084	0.569	0.238	0.440	0.695	-0.0116 ± 0.0341 ± 0.0011	-0.0116 ± 0.0341 ± 0.0011
		0.54 – 2.00	2.72	0.083	0.632	0.244	0.644	0.622	0.0157 ± 0.0603 ± 0.0027	0.0157 ± 0.0603 ± 0.0027
	0.28 – 0.37	0.00 – 0.23	1.88	0.084	0.432	0.321	0.142	0.836	-0.0005 ± 0.0347 ± 0.0027	-0.0005 ± 0.0347 ± 0.0027
		0.23 – 0.36	2.13	0.084	0.490	0.322	0.292	0.779	0.0257 ± 0.0527 ± 0.0029	0.0257 ± 0.0527 ± 0.0029
		0.36 – 0.54	2.26	0.084	0.523	0.320	0.445	0.742	0.0400 ± 0.0400 ± 0.0079	0.0400 ± 0.0400 ± 0.0079
		0.54 – 2.00	2.48	0.084	0.575	0.324	0.678	0.685	-0.0319 ± 0.0466 ± 0.0007	-0.0319 ± 0.0466 ± 0.0007
	0.37 – 0.49	0.00 – 0.23	1.82	0.084	0.418	0.423	0.146	0.847	0.0072 ± 0.0399 ± 0.0045	0.0072 ± 0.0399 ± 0.0045
		0.23 – 0.36	1.95	0.084	0.448	0.424	0.292	0.819	-0.0409 ± 0.0529 ± 0.0034	-0.0409 ± 0.0529 ± 0.0034
		0.36 – 0.54	2.17	0.084	0.502	0.424	0.442	0.767	-0.0890 ± 0.0553 ± 0.0057	-0.0890 ± 0.0553 ± 0.0057
		0.54 – 2.00	2.37	0.084	0.546	0.425	0.724	0.715	0.1107 ± 0.0449 ± 0.0042	0.1107 ± 0.0449 ± 0.0042
	0.49 – 0.70	0.00 – 0.23	1.78	0.084	0.407	0.579	0.148	0.856	0.0143 ± 0.0466 ± 0.0007	0.0143 ± 0.0466 ± 0.0007
		0.23 – 0.36	1.85	0.084	0.425	0.581	0.295	0.840	-0.0980 ± 0.0485 ± 0.0072	-0.0980 ± 0.0485 ± 0.0072
		0.36 – 0.54	2.00	0.084	0.461	0.582	0.442	0.808	0.0157 ± 0.0570 ± 0.0088	0.0157 ± 0.0570 ± 0.0088
		0.54 – 2.00	2.26	0.084	0.524	0.580	0.751	0.743	-0.0340 ± 0.0500 ± 0.0097	-0.0340 ± 0.0500 ± 0.0097
0.098 – 0.138	0.20 – 0.28	0.00 – 0.23	2.86	0.116	0.477	0.239	0.138	0.799	0.0008 ± 0.0297 ± 0.0015	0.0008 ± 0.0297 ± 0.0015
		0.23 – 0.36	3.17	0.116	0.531	0.238	0.292	0.743	-0.0769 ± 0.0427 ± 0.0050	-0.0769 ± 0.0427 ± 0.0050
		0.36 – 0.54	3.25	0.115	0.545	0.239	0.442	0.724	-0.0229 ± 0.0384 ± 0.0033	-0.0229 ± 0.0384 ± 0.0033
		0.54 – 2.00	3.54	0.116	0.593	0.244	0.645	0.671	0.0420 ± 0.0731 ± 0.0152	0.0420 ± 0.0731 ± 0.0152
	0.28 – 0.37	0.00 – 0.23	2.52	0.116	0.420	0.321	0.144	0.844	-0.0167 ± 0.0313 ± 0.0017	-0.0167 ± 0.0313 ± 0.0017
		0.23 – 0.36	2.77	0.116	0.462	0.323	0.291	0.806	0.0180 ± 0.0464 ± 0.0010	0.0180 ± 0.0464 ± 0.0010
		0.36 – 0.54	2.98	0.116	0.500	0.322	0.444	0.766	0.1095 ± 0.0430 ± 0.0046	0.1095 ± 0.0430 ± 0.0046
		0.54 – 2.00	3.17	0.116	0.532	0.324	0.675	0.732	0.0389 ± 0.0504 ± 0.0039	0.0389 ± 0.0504 ± 0.0039
	0.37 – 0.49	0.00 – 0.23	2.39	0.116	0.399	0.422	0.148	0.860	-0.1144 ± 0.0360 ± 0.0040	-0.1144 ± 0.0360 ± 0.0040
		0.23 – 0.36	2.48	0.116	0.413	0.425	0.293	0.845	0.0521 ± 0.0421 ± 0.0060	0.0521 ± 0.0421 ± 0.0060
		0.36 – 0.54	2.80	0.116	0.467	0.426	0.441	0.797	-0.0014 ± 0.0523 ± 0.0020	-0.0014 ± 0.0523 ± 0.0020
		0.54 – 2.00	3.00	0.115	0.504	0.424	0.716	0.756	0.0287 ± 0.0481 ± 0.0044	0.0287 ± 0.0481 ± 0.0044
	0.49 – 0.70	0.00 – 0.23	2.37	0.116	0.396	0.579	0.150	0.863	0.0011 ± 0.0426 ± 0.0012	0.0011 ± 0.0426 ± 0.0012
		0.23 – 0.36	2.39	0.116	0.399	0.577	0.295	0.859	0.0061 ± 0.0434 ± 0.0027	0.0061 ± 0.0434 ± 0.0027
		0.36 – 0.54	2.55	0.116	0.426	0.583	0.441	0.834	0.0210 ± 0.0479 ± 0.0021	0.0210 ± 0.0479 ± 0.0021
		0.54 – 2.00	2.92	0.115	0.490	0.581	0.747	0.774	-0.0011 ± 0.0509 ± 0.0059	-0.0011 ± 0.0509 ± 0.0059
0.138 – 0.600	0.20 – 0.28	0.00 – 0.23	4.91	0.204	0.467	0.239	0.141	0.811	-0.0224 ± 0.0245 ± 0.0051	-0.0224 ± 0.0245 ± 0.0051
		0.23 – 0.36	5.22	0.212	0.486	0.240	0.290	0.790	-0.0054 ± 0.0360 ± 0.0121	-0.0054 ± 0.0360 ± 0.0121
		0.36 – 0.54	5.18	0.205	0.499	0.239	0.443	0.775	-0.0633 ± 0.0423 ± 0.0029	-0.0633 ± 0.0423 ± 0.0029
		0.54 – 2.00	5.40	0.211	0.509	0.243	0.645	0.767	0.0816 ± 0.0893 ± 0.0105	0.0816 ± 0.0893 ± 0.0105
	0.28 – 0.37	0.00 – 0.23	4.41	0.199	0.426	0.321	0.148	0.842	-0.0159 ± 0.0269 ± 0.0004	-0.0159 ± 0.0269 ± 0.0004
		0.23 – 0.36	4.55	0.208	0.426	0.322	0.291	0.839	0.0479 ± 0.0336 ± 0.0079	0.0479 ± 0.0336 ± 0.0079
		0.36 – 0.54	4.80	0.211	0.450	0.323	0.440	0.816	-0.0827 ± 0.0406 ± 0.0154	-0.0827 ± 0.0406 ± 0.0154
		0.54 – 2.00	4.79	0.204	0.464	0.324	0.679	0.802	0.0347 ± 0.0563 ± 0.0087	0.0347 ± 0.0563 ± 0.0087
	0.37 – 0.49	0.00 – 0.23	4.26	0.197	0.414	0.422	0.149	0.852	-0.0494 ± 0.0324 ± 0.0019	-0.0494 ± 0.0324 ± 0.0019
		0.23 – 0.36	4.31	0.203	0.410	0.424	0.294	0.852	0.1247 ± 0.0353 ± 0.0045	0.1247 ± 0.0353 ± 0.0045
		0.36 – 0.54	4.59	0.212	0.423	0.425	0.438	0.840	-0.0214 ± 0.0405 ± 0.0047	-0.0214 ± 0.0405 ± 0.0047
		0.54 – 2.00	4.78	0.208	0.453	0.426	0.712	0.809	-0.0004 ± 0.0496 ± 0.0099	-0.0004 ± 0.0496 ± 0.0099
	0.49 – 0.70	0.00 – 0.23	4.25	0.197	0.413	0.574	0.152	0.852	0.0005 ± 0.0392 ± 0.0012	0.0005 ± 0.0392 ± 0.0012
		0.23 – 0.36	4.13	0.198	0.400	0.574	0.295	0.861	-0.0726 ± 0.0400 ± 0.0019	-0.0726 ± 0.0400 ± 0.0019
		0.36 – 0.54	4.25	0.203	0.405	0.579	0.443	0.855	-0.0978 ± 0.0400 ± 0.0062	-0.0978 ± 0.0400 ± 0.0062
		0.54 – 2.00	4.67	0.210	0.437	0.581	0.726	0.825	0.0833 ± 0.0465 ± 0.0159	0.0833 ± 0.0465 ± 0.0159

Table 106. Three-dimensionally binned SFA and CSA amplitudes of the $\sin(2\phi + \phi_S)$ modulation for π^- as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin			Average kinematics						K^+	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(2\phi + \phi_S)/\epsilon \rangle_{U\perp}$	$2\langle \sin(2\phi + \phi_S) \rangle_{U\perp}$
0.023 – 0.072	0.20 – 0.28	0.00 – 0.23	1.48	0.052	0.565	0.239	0.149	0.705	0.0314 ± 0.0899 ± 0.0001	0.0314 ± 0.0899 ± 0.0001
		0.23 – 0.36	1.54	0.048	0.638	0.237	0.297	0.612	0.0046 ± 0.0757 ± 0.0131	0.0046 ± 0.0757 ± 0.0131
		0.36 – 0.54	1.55	0.046	0.674	0.239	0.444	0.562	0.0363 ± 0.0564 ± 0.0011	0.0363 ± 0.0564 ± 0.0011
		0.54 – 2.00	1.59	0.043	0.734	0.242	0.670	0.476	0.1348 ± 0.0794 ± 0.0130	0.1348 ± 0.0794 ± 0.0130
	0.28 – 0.37	0.00 – 0.23	1.44	0.054	0.529	0.321	0.150	0.747	0.0518 ± 0.0872 ± 0.0205	0.0518 ± 0.0872 ± 0.0205
		0.23 – 0.36	1.51	0.050	0.603	0.322	0.298	0.657	0.1993 ± 0.1150 ± 0.0053	0.1993 ± 0.1150 ± 0.0053
		0.36 – 0.54	1.54	0.047	0.645	0.322	0.448	0.601	-0.0570 ± 0.0641 ± 0.0020	-0.0570 ± 0.0641 ± 0.0020
		0.54 – 2.00	1.56	0.044	0.701	0.326	0.722	0.523	0.0249 ± 0.0594 ± 0.0212	0.0249 ± 0.0594 ± 0.0212
	0.37 – 0.49	0.00 – 0.23	1.43	0.055	0.511	0.422	0.148	0.769	-0.0875 ± 0.0870 ± 0.0055	-0.0875 ± 0.0870 ± 0.0055
		0.23 – 0.36	1.47	0.052	0.557	0.424	0.297	0.713	0.1656 ± 0.1281 ± 0.0086	0.1656 ± 0.1281 ± 0.0086
		0.36 – 0.54	1.51	0.050	0.608	0.424	0.449	0.651	0.1249 ± 0.0900 ± 0.0039	0.1249 ± 0.0900 ± 0.0039
		0.54 – 2.00	1.56	0.046	0.671	0.428	0.763	0.565	-0.0185 ± 0.0564 ± 0.0244	-0.0185 ± 0.0564 ± 0.0244
	0.49 – 0.70	0.00 – 0.23	1.42	0.057	0.493	0.572	0.150	0.787	0.0965 ± 0.1040 ± 0.0073	0.0965 ± 0.1040 ± 0.0073
		0.23 – 0.36	1.44	0.054	0.534	0.573	0.298	0.740	-0.0977 ± 0.1285 ± 0.0047	-0.0977 ± 0.1285 ± 0.0047
		0.36 – 0.54	1.49	0.051	0.587	0.576	0.452	0.675	0.2064 ± 0.1267 ± 0.0064	0.2064 ± 0.1267 ± 0.0064
		0.54 – 2.00	1.53	0.048	0.637	0.580	0.805	0.612	-0.0167 ± 0.0578 ± 0.0321	-0.0167 ± 0.0578 ± 0.0321
0.072 – 0.098	0.20 – 0.28	0.00 – 0.23	2.21	0.084	0.508	0.241	0.142	0.770	0.0051 ± 0.0941 ± 0.0184	0.0051 ± 0.0941 ± 0.0184
		0.23 – 0.36	2.43	0.084	0.562	0.240	0.295	0.709	-0.0409 ± 0.1014 ± 0.0213	-0.0409 ± 0.1014 ± 0.0213
		0.36 – 0.54	2.50	0.084	0.578	0.241	0.440	0.683	0.0098 ± 0.0977 ± 0.0043	0.0098 ± 0.0977 ± 0.0043
		0.54 – 2.00	2.72	0.084	0.630	0.244	0.652	0.624	0.3351 ± 0.1552 ± 0.0203	0.3351 ± 0.1552 ± 0.0203
	0.28 – 0.37	0.00 – 0.23	1.98	0.084	0.455	0.323	0.142	0.816	0.0209 ± 0.0801 ± 0.0152	0.0209 ± 0.0801 ± 0.0152
		0.23 – 0.36	2.21	0.084	0.510	0.324	0.293	0.762	-0.1113 ± 0.1281 ± 0.0038	-0.1113 ± 0.1281 ± 0.0038
		0.36 – 0.54	2.38	0.084	0.550	0.324	0.446	0.714	0.0579 ± 0.0966 ± 0.0110	0.0579 ± 0.0966 ± 0.0110
		0.54 – 2.00	2.54	0.084	0.587	0.327	0.690	0.669	0.0067 ± 0.1017 ± 0.0106	0.0067 ± 0.1017 ± 0.0106
	0.37 – 0.49	0.00 – 0.23	1.88	0.085	0.429	0.423	0.145	0.839	-0.0213 ± 0.0752 ± 0.0062	-0.0213 ± 0.0752 ± 0.0062
		0.23 – 0.36	2.07	0.084	0.475	0.425	0.294	0.795	0.1468 ± 0.1096 ± 0.0200	0.1468 ± 0.1096 ± 0.0200
		0.36 – 0.54	2.23	0.084	0.512	0.427	0.445	0.758	-0.0500 ± 0.1179 ± 0.0106	-0.0500 ± 0.1179 ± 0.0106
		0.54 – 2.00	2.44	0.084	0.566	0.430	0.735	0.695	-0.0281 ± 0.0861 ± 0.0340	-0.0281 ± 0.0861 ± 0.0340
	0.49 – 0.70	0.00 – 0.23	1.88	0.085	0.427	0.577	0.150	0.842	-0.0334 ± 0.0890 ± 0.0116	-0.0334 ± 0.0890 ± 0.0116
		0.23 – 0.36	1.94	0.084	0.447	0.575	0.297	0.820	0.0837 ± 0.1007 ± 0.0157	0.0837 ± 0.1007 ± 0.0157
		0.36 – 0.54	2.06	0.085	0.470	0.583	0.446	0.798	0.0664 ± 0.1030 ± 0.0145	0.0664 ± 0.1030 ± 0.0145
		0.54 – 2.00	2.33	0.084	0.538	0.587	0.768	0.728	0.0376 ± 0.0826 ± 0.0369	0.0376 ± 0.0826 ± 0.0369
0.098 – 0.138	0.20 – 0.28	0.00 – 0.23	2.96	0.116	0.494	0.241	0.139	0.785	-0.0452 ± 0.0836 ± 0.0127	-0.0452 ± 0.0836 ± 0.0127
		0.23 – 0.36	3.31	0.116	0.554	0.239	0.290	0.718	-0.1370 ± 0.1204 ± 0.0463	-0.1370 ± 0.1204 ± 0.0463
		0.36 – 0.54	3.25	0.115	0.548	0.240	0.443	0.720	0.0032 ± 0.1076 ± 0.0187	0.0032 ± 0.1076 ± 0.0187
		0.54 – 2.00	3.53	0.115	0.596	0.245	0.650	0.664	-0.0318 ± 0.1965 ± 0.0394	-0.0318 ± 0.1965 ± 0.0394
	0.28 – 0.37	0.00 – 0.23	2.64	0.116	0.441	0.324	0.142	0.829	-0.0600 ± 0.0678 ± 0.0183	-0.0600 ± 0.0678 ± 0.0183
		0.23 – 0.36	2.91	0.116	0.485	0.326	0.292	0.787	0.3211 ± 0.1129 ± 0.0249	0.3211 ± 0.1129 ± 0.0249
		0.36 – 0.54	3.08	0.115	0.519	0.323	0.446	0.746	0.0750 ± 0.0963 ± 0.0207	0.0750 ± 0.0963 ± 0.0207
		0.54 – 2.00	3.20	0.116	0.535	0.327	0.682	0.726	0.0494 ± 0.1136 ± 0.0355	0.0494 ± 0.1136 ± 0.0355
	0.37 – 0.49	0.00 – 0.23	2.54	0.116	0.425	0.424	0.148	0.841	0.0743 ± 0.0705 ± 0.0153	0.0743 ± 0.0705 ± 0.0153
		0.23 – 0.36	2.66	0.116	0.441	0.427	0.291	0.824	-0.0802 ± 0.0822 ± 0.0160	-0.0802 ± 0.0822 ± 0.0160
		0.36 – 0.54	3.00	0.117	0.497	0.428	0.442	0.773	-0.0570 ± 0.1052 ± 0.0264	-0.0570 ± 0.1052 ± 0.0264
		0.54 – 2.00	3.21	0.115	0.539	0.428	0.716	0.723	0.0576 ± 0.0907 ± 0.0244	0.0576 ± 0.0907 ± 0.0244
	0.49 – 0.70	0.00 – 0.23	2.47	0.116	0.412	0.574	0.150	0.851	0.1037 ± 0.0763 ± 0.0201	0.1037 ± 0.0763 ± 0.0201
		0.23 – 0.36	2.50	0.116	0.418	0.577	0.296	0.845	0.0285 ± 0.0829 ± 0.0156	0.0285 ± 0.0829 ± 0.0156
		0.36 – 0.54	2.70	0.116	0.451	0.583	0.443	0.815	0.0757 ± 0.0819 ± 0.0308	0.0757 ± 0.0819 ± 0.0308
		0.54 – 2.00	3.06	0.115	0.514	0.588	0.752	0.752	-0.0456 ± 0.0883 ± 0.0346	-0.0456 ± 0.0883 ± 0.0346
0.138 – 0.600	0.20 – 0.28	0.00 – 0.23	5.15	0.207	0.485	0.242	0.138	0.795	0.2158 ± 0.0657 ± 0.0104	0.2158 ± 0.0657 ± 0.0104
		0.23 – 0.36	5.33	0.208	0.505	0.243	0.292	0.773	0.0329 ± 0.1046 ± 0.0024	0.0329 ± 0.1046 ± 0.0024
		0.36 – 0.54	5.06	0.196	0.508	0.241	0.445	0.765	-0.1364 ± 0.1193 ± 0.0008	-0.1364 ± 0.1193 ± 0.0008
		0.54 – 2.00	5.22	0.211	0.493	0.246	0.645	0.779	0.2864 ± 0.2359 ± 0.0026	0.2864 ± 0.2359 ± 0.0026
	0.28 – 0.37	0.00 – 0.23	4.76	0.204	0.449	0.323	0.142	0.825	0.1148 ± 0.0569 ± 0.0153	0.1148 ± 0.0569 ± 0.0153
		0.23 – 0.36	5.01	0.211	0.462	0.325	0.289	0.810	-0.0730 ± 0.0726 ± 0.0015	-0.0730 ± 0.0726 ± 0.0015
		0.36 – 0.54	5.04	0.203	0.488	0.325	0.443	0.783	-0.1185 ± 0.0879 ± 0.0107	-0.1185 ± 0.0879 ± 0.0107
		0.54 – 2.00	4.69	0.198	0.464	0.327	0.681	0.798	0.0152 ± 0.1199 ± 0.0050	0.0152 ± 0.1199 ± 0.0050
	0.37 – 0.49	0.00 – 0.23	4.63	0.204	0.435	0.424	0.150	0.836	-0.0624 ± 0.0563 ± 0.0093	-0.0624 ± 0.0563 ± 0.0093
		0.23 – 0.36	4.62	0.204	0.437	0.425	0.292	0.831	0.0369 ± 0.0634 ± 0.0068	0.0369 ± 0.0634 ± 0.0068
		0.36 – 0.54	4.91	0.210	0.458	0.426	0.439	0.812	0.0284 ± 0.0695 ± 0.0195	0.0284 ± 0.0695 ± 0.0195
		0.54 – 2.00	5.02	0.204	0.483	0.428	0.707	0.784	0.1468 ± 0.0878 ± 0.0372	0.1468 ± 0.0878 ± 0.0372
	0.49 – 0.70	0.00 – 0.23	4.55	0.204	0.426	0.576	0.149	0.843	-0.0345 ± 0.0663 ± 0.0193	-0.0345 ± 0.0663 ± 0.0193
		0.23 – 0.36	4.52	0.206	0.422	0.577	0.296	0.844	-0.0468 ± 0.0636 ± 0.0047	-0.0468 ± 0.0636 ± 0.0047
		0.36 – 0.54	4.63	0.207	0.435	0.583	0.443	0.831	0.0066 ± 0.0601 ± 0.0128	0.0066 ± 0.0601 ± 0.0128
		0.54 – 2.00	5.06	0.210	0.473	0.589	0.731	0.796	-0.0633 ± 0.0701 ± 0.0194	-0.0633 ± 0.0701 ± 0.0194

Table 107. Three-dimensionally binned SFA and CSA amplitudes of the $\sin(2\phi + \phi_S)$ modulation for K^+ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin			Average kinematics						K^-	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(2\phi+\phi_S)/\epsilon \rangle_{U\perp}$	$2\langle \sin(2\phi+\phi_S) \rangle_{U\perp}$
0.023 – 0.072	0.20 – 0.28	0.00 – 0.23	1.48	0.051	0.575	0.236	0.152	0.692	-0.0604 ± 0.1248 ± 0.0058	-0.0604 ± 0.1248 ± 0.0058
		0.23 – 0.36	1.51	0.047	0.646	0.236	0.298	0.601	-0.0286 ± 0.0911 ± 0.0081	-0.0286 ± 0.0911 ± 0.0081
		0.36 – 0.54	1.54	0.045	0.684	0.237	0.444	0.547	-0.0082 ± 0.0738 ± 0.0058	-0.0082 ± 0.0738 ± 0.0058
		0.54 – 2.00	1.61	0.043	0.744	0.242	0.666	0.461	0.1853 ± 0.1007 ± 0.0100	0.1853 ± 0.1007 ± 0.0100
	0.28 – 0.37	0.00 – 0.23	1.45	0.053	0.537	0.319	0.151	0.738	-0.2415 ± 0.1200 ± 0.0026	-0.2415 ± 0.1200 ± 0.0026
		0.23 – 0.36	1.50	0.049	0.608	0.320	0.296	0.650	-0.2727 ± 0.1648 ± 0.0043	-0.2727 ± 0.1648 ± 0.0043
		0.36 – 0.54	1.51	0.047	0.644	0.319	0.449	0.602	0.0210 ± 0.0886 ± 0.0099	0.0210 ± 0.0886 ± 0.0099
		0.54 – 2.00	1.56	0.044	0.701	0.324	0.724	0.523	0.0996 ± 0.0809 ± 0.0220	0.0996 ± 0.0809 ± 0.0220
	0.37 – 0.49	0.00 – 0.23	1.40	0.054	0.513	0.424	0.146	0.768	-0.1404 ± 0.1343 ± 0.0120	-0.1404 ± 0.1343 ± 0.0120
		0.23 – 0.36	1.48	0.051	0.579	0.422	0.298	0.689	0.1669 ± 0.1876 ± 0.0023	0.1669 ± 0.1876 ± 0.0023
		0.36 – 0.54	1.53	0.049	0.622	0.423	0.448	0.633	0.1954 ± 0.1352 ± 0.0108	0.1954 ± 0.1352 ± 0.0108
		0.54 – 2.00	1.54	0.045	0.674	0.425	0.770	0.562	-0.0620 ± 0.0844 ± 0.0122	-0.0620 ± 0.0844 ± 0.0122
	0.49 – 0.70	0.00 – 0.23	1.41	0.055	0.508	0.562	0.151	0.771	-0.0905 ± 0.1550 ± 0.0034	-0.0905 ± 0.1550 ± 0.0034
		0.23 – 0.36	1.44	0.052	0.550	0.566	0.298	0.721	-0.3429 ± 0.1792 ± 0.0127	-0.3429 ± 0.1792 ± 0.0127
		0.36 – 0.54	1.49	0.050	0.595	0.572	0.446	0.664	-0.1737 ± 0.1980 ± 0.0169	-0.1737 ± 0.1980 ± 0.0169
		0.54 – 2.00	1.53	0.046	0.662	0.569	0.799	0.578	0.0693 ± 0.1034 ± 0.0288	0.0693 ± 0.1034 ± 0.0288
0.072 – 0.098	0.20 – 0.28	0.00 – 0.23	2.18	0.084	0.503	0.239	0.139	0.775	-0.1088 ± 0.1341 ± 0.0094	-0.1088 ± 0.1341 ± 0.0094
		0.23 – 0.36	2.46	0.084	0.568	0.237	0.294	0.701	-0.1110 ± 0.1516 ± 0.0204	-0.1110 ± 0.1516 ± 0.0204
		0.36 – 0.54	2.54	0.084	0.586	0.237	0.440	0.677	-0.0566 ± 0.1246 ± 0.0116	-0.0566 ± 0.1246 ± 0.0116
		0.54 – 2.00	2.75	0.084	0.637	0.242	0.648	0.614	-0.1723 ± 0.2070 ± 0.0247	-0.1723 ± 0.2070 ± 0.0247
	0.28 – 0.37	0.00 – 0.23	1.95	0.084	0.448	0.323	0.138	0.824	0.0936 ± 0.1105 ± 0.0081	0.0936 ± 0.1105 ± 0.0081
		0.23 – 0.36	2.24	0.084	0.518	0.322	0.292	0.752	0.3578 ± 0.2066 ± 0.0240	0.3578 ± 0.2066 ± 0.0240
		0.36 – 0.54	2.40	0.084	0.555	0.321	0.444	0.712	0.0513 ± 0.1354 ± 0.0028	0.0513 ± 0.1354 ± 0.0028
		0.54 – 2.00	2.48	0.084	0.573	0.324	0.693	0.689	0.2359 ± 0.1486 ± 0.0039	0.2359 ± 0.1486 ± 0.0039
	0.37 – 0.49	0.00 – 0.23	1.84	0.084	0.426	0.424	0.143	0.842	0.0596 ± 0.1292 ± 0.0151	0.0596 ± 0.1292 ± 0.0151
		0.23 – 0.36	2.06	0.084	0.475	0.424	0.294	0.794	-0.0387 ± 0.1628 ± 0.0046	-0.0387 ± 0.1628 ± 0.0046
		0.36 – 0.54	2.27	0.083	0.528	0.424	0.443	0.743	0.1611 ± 0.1863 ± 0.0364	0.1611 ± 0.1863 ± 0.0364
		0.54 – 2.00	2.45	0.084	0.566	0.423	0.727	0.695	-0.0175 ± 0.1439 ± 0.0283	-0.0175 ± 0.1439 ± 0.0283
	0.49 – 0.70	0.00 – 0.23	1.89	0.085	0.431	0.567	0.150	0.837	-0.0710 ± 0.1545 ± 0.0133	-0.0710 ± 0.1545 ± 0.0133
		0.23 – 0.36	2.00	0.085	0.455	0.570	0.295	0.811	0.2623 ± 0.1648 ± 0.0198	0.2623 ± 0.1648 ± 0.0198
		0.36 – 0.54	2.16	0.084	0.495	0.577	0.440	0.775	0.2903 ± 0.2186 ± 0.0053	0.2903 ± 0.2186 ± 0.0053
		0.54 – 2.00	2.42	0.084	0.556	0.570	0.772	0.707	0.0672 ± 0.1521 ± 0.0061	0.0672 ± 0.1521 ± 0.0061
0.098 – 0.138	0.20 – 0.28	0.00 – 0.23	3.02	0.116	0.505	0.240	0.138	0.774	-0.0049 ± 0.1169 ± 0.0049	-0.0049 ± 0.1169 ± 0.0049
		0.23 – 0.36	3.26	0.115	0.549	0.241	0.290	0.727	-0.2478 ± 0.1801 ± 0.0087	-0.2478 ± 0.1801 ± 0.0087
		0.36 – 0.54	3.30	0.115	0.556	0.238	0.444	0.713	-0.1875 ± 0.1449 ± 0.0287	-0.1875 ± 0.1449 ± 0.0287
		0.54 – 2.00	3.61	0.115	0.607	0.243	0.649	0.655	-0.2770 ± 0.2451 ± 0.0249	-0.2770 ± 0.2451 ± 0.0249
	0.28 – 0.37	0.00 – 0.23	2.69	0.116	0.450	0.323	0.142	0.819	-0.0327 ± 0.1066 ± 0.0065	-0.0327 ± 0.1066 ± 0.0065
		0.23 – 0.36	2.98	0.116	0.501	0.322	0.294	0.769	-0.0153 ± 0.1831 ± 0.0285	-0.0153 ± 0.1831 ± 0.0285
		0.36 – 0.54	3.06	0.115	0.516	0.324	0.450	0.750	0.0887 ± 0.1588 ± 0.0066	0.0887 ± 0.1588 ± 0.0066
		0.54 – 2.00	3.34	0.116	0.559	0.324	0.694	0.703	0.0976 ± 0.1606 ± 0.0249	0.0976 ± 0.1606 ± 0.0249
	0.37 – 0.49	0.00 – 0.23	2.42	0.115	0.408	0.423	0.149	0.854	0.0260 ± 0.1158 ± 0.0073	0.0260 ± 0.1158 ± 0.0073
		0.23 – 0.36	2.69	0.117	0.447	0.427	0.293	0.819	-0.0712 ± 0.1459 ± 0.0179	-0.0712 ± 0.1459 ± 0.0179
		0.36 – 0.54	2.94	0.116	0.491	0.428	0.442	0.778	-0.1311 ± 0.2008 ± 0.0057	-0.1311 ± 0.2008 ± 0.0057
		0.54 – 2.00	3.19	0.114	0.540	0.424	0.741	0.723	-0.3192 ± 0.1452 ± 0.0518	-0.3192 ± 0.1452 ± 0.0518
	0.49 – 0.70	0.00 – 0.23	2.43	0.115	0.407	0.563	0.149	0.854	-0.1173 ± 0.1521 ± 0.0134	-0.1173 ± 0.1521 ± 0.0134
		0.23 – 0.36	2.47	0.115	0.416	0.572	0.295	0.848	-0.1816 ± 0.1486 ± 0.0270	-0.1816 ± 0.1486 ± 0.0270
		0.36 – 0.54	2.72	0.116	0.453	0.577	0.435	0.813	-0.0084 ± 0.1703 ± 0.0181	-0.0084 ± 0.1703 ± 0.0181
		0.54 – 2.00	3.08	0.115	0.517	0.574	0.764	0.750	0.0317 ± 0.1886 ± 0.0427	0.0317 ± 0.1886 ± 0.0427
0.138 – 0.600	0.20 – 0.28	0.00 – 0.23	4.98	0.201	0.481	0.241	0.144	0.800	-0.0534 ± 0.0910 ± 0.0292	-0.0534 ± 0.0910 ± 0.0292
		0.23 – 0.36	5.30	0.206	0.507	0.241	0.290	0.770	0.0578 ± 0.1472 ± 0.0270	0.0578 ± 0.1472 ± 0.0270
		0.36 – 0.54	5.32	0.204	0.518	0.239	0.449	0.757	0.0484 ± 0.1551 ± 0.0473	0.0484 ± 0.1551 ± 0.0473
		0.54 – 2.00	5.44	0.205	0.527	0.245	0.663	0.747	-0.1855 ± 0.2779 ± 0.0815	-0.1855 ± 0.2779 ± 0.0815
	0.28 – 0.37	0.00 – 0.23	4.71	0.203	0.451	0.322	0.146	0.822	0.0541 ± 0.0937 ± 0.0145	0.0541 ± 0.0937 ± 0.0145
		0.23 – 0.36	4.92	0.209	0.462	0.325	0.291	0.809	0.1951 ± 0.1169 ± 0.0281	0.1951 ± 0.1169 ± 0.0281
		0.36 – 0.54	4.90	0.205	0.473	0.325	0.441	0.795	0.0637 ± 0.1432 ± 0.0415	0.0637 ± 0.1432 ± 0.0415
		0.54 – 2.00	5.07	0.200	0.503	0.324	0.691	0.765	-0.0065 ± 0.1719 ± 0.0758	-0.0065 ± 0.1719 ± 0.0758
	0.37 – 0.49	0.00 – 0.23	4.35	0.195	0.430	0.420	0.149	0.839	-0.0628 ± 0.1146 ± 0.0143	-0.0628 ± 0.1146 ± 0.0143
		0.23 – 0.36	4.49	0.205	0.422	0.423	0.293	0.843	-0.0487 ± 0.1215 ± 0.0156	-0.0487 ± 0.1215 ± 0.0156
		0.36 – 0.54	4.75	0.207	0.450	0.426	0.437	0.817	0.0395 ± 0.1290 ± 0.0497	0.0395 ± 0.1290 ± 0.0497
		0.54 – 2.00	4.87	0.203	0.474	0.425	0.728	0.792	-0.0088 ± 0.1509 ± 0.0582	-0.0088 ± 0.1509 ± 0.0582
	0.49 – 0.70	0.00 – 0.23	4.39	0.196	0.432	0.562	0.154	0.839	-0.1144 ± 0.1405 ± 0.0007	-0.1144 ± 0.1405 ± 0.0007
		0.23 – 0.36	4.35	0.201	0.419	0.571	0.294	0.846	0.2146 ± 0.1569 ± 0.0174	0.2146 ± 0.1569 ± 0.0174
		0.36 – 0.54	4.56	0.207	0.429	0.577	0.440	0.838	0.0149 ± 0.1283 ± 0.0223	0.0149 ± 0.1283 ± 0.0223
		0.54 – 2.00	4.85	0.204	0.470	0.579	0.735	0.796	-0.0774 ± 0.1545 ± 0.0462	-0.0774 ± 0.1545 ± 0.0462

Table 108. Three-dimensionally binned SFA and CSA amplitudes of the $\sin(2\phi + \phi_S)$ modulation for K^- as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

Kinematic bin			Average kinematics						p	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \sin(2\phi+\phi_S)/\epsilon \rangle_{U\perp}$	$2\langle \sin(2\phi+\phi_S) \rangle_{U\perp}$
0.023 – 0.073	0.20 – 0.34	0.00 – 0.24	1.60	0.048	0.656	0.281	0.167	0.598	-0.0824 ± 0.1402 ± 0.0249	-0.0824 ± 0.1402 ± 0.0249
		0.24 – 0.40	1.61	0.045	0.698	0.274	0.327	0.535	0.0084 ± 0.0809 ± 0.0024	0.0084 ± 0.0809 ± 0.0024
		0.40 – 0.57	1.60	0.044	0.713	0.271	0.483	0.512	0.0068 ± 0.0608 ± 0.0018	0.0068 ± 0.0608 ± 0.0018
		0.57 – 2.00	1.60	0.043	0.734	0.276	0.728	0.480	-0.0382 ± 0.0574 ± 0.0015	-0.0382 ± 0.0574 ± 0.0015
	0.34 – 0.43	0.00 – 0.24	1.48	0.053	0.544	0.384	0.157	0.736	0.0673 ± 0.0996 ± 0.0154	0.0673 ± 0.0996 ± 0.0154
		0.24 – 0.40	1.51	0.050	0.603	0.384	0.322	0.659	0.2346 ± 0.1336 ± 0.0061	0.2346 ± 0.1336 ± 0.0061
		0.40 – 0.57	1.54	0.049	0.632	0.383	0.483	0.620	0.0785 ± 0.0835 ± 0.0307	0.0785 ± 0.0835 ± 0.0307
		0.57 – 2.00	1.54	0.046	0.669	0.384	0.766	0.568	-0.0460 ± 0.0621 ± 0.0146	-0.0460 ± 0.0621 ± 0.0146
	0.43 – 0.52	0.00 – 0.24	1.43	0.056	0.503	0.473	0.159	0.777	0.0246 ± 0.1076 ± 0.0075	0.0246 ± 0.1076 ± 0.0075
		0.24 – 0.40	1.47	0.052	0.567	0.471	0.322	0.699	-0.1040 ± 0.1449 ± 0.0078	-0.1040 ± 0.1449 ± 0.0078
		0.40 – 0.57	1.50	0.050	0.597	0.472	0.481	0.663	0.0426 ± 0.1295 ± 0.0131	0.0426 ± 0.1295 ± 0.0131
		0.57 – 2.00	1.52	0.047	0.641	0.471	0.796	0.604	0.0183 ± 0.0780 ± 0.0253	0.0183 ± 0.0780 ± 0.0253
	0.52 – 0.70	0.00 – 0.24	1.40	0.057	0.487	0.588	0.153	0.795	-0.0292 ± 0.1215 ± 0.0033	-0.0292 ± 0.1215 ± 0.0033
		0.24 – 0.40	1.45	0.055	0.527	0.587	0.321	0.747	-0.0980 ± 0.1426 ± 0.0403	-0.0980 ± 0.1426 ± 0.0403
		0.40 – 0.57	1.46	0.052	0.561	0.589	0.482	0.707	0.3175 ± 0.1542 ± 0.0076	0.3175 ± 0.1542 ± 0.0076
		0.57 – 2.00	1.50	0.049	0.607	0.591	0.808	0.649	0.1108 ± 0.0784 ± 0.0126	0.1108 ± 0.0784 ± 0.0126
0.073 – 0.107	0.20 – 0.34	0.00 – 0.24	2.83	0.089	0.617	0.293	0.158	0.653	-0.2540 ± 0.1585 ± 0.0308	-0.2540 ± 0.1585 ± 0.0308
		0.24 – 0.40	2.91	0.088	0.638	0.285	0.321	0.624	-0.0288 ± 0.1477 ± 0.0019	-0.0288 ± 0.1477 ± 0.0019
		0.40 – 0.57	3.01	0.088	0.661	0.279	0.481	0.592	-0.0354 ± 0.1054 ± 0.0160	-0.0354 ± 0.1054 ± 0.0160
		0.57 – 2.00	3.03	0.088	0.666	0.282	0.718	0.584	0.0576 ± 0.1038 ± 0.0202	0.0576 ± 0.1038 ± 0.0202
	0.34 – 0.43	0.00 – 0.24	2.34	0.089	0.509	0.385	0.148	0.775	-0.1263 ± 0.0939 ± 0.0024	-0.1263 ± 0.0939 ± 0.0024
		0.24 – 0.40	2.49	0.088	0.545	0.385	0.317	0.732	0.1090 ± 0.1317 ± 0.0420	0.1090 ± 0.1317 ± 0.0420
		0.40 – 0.57	2.53	0.088	0.558	0.385	0.480	0.717	-0.2514 ± 0.1164 ± 0.0028	-0.2514 ± 0.1164 ± 0.0028
		0.57 – 2.00	2.63	0.088	0.575	0.385	0.744	0.694	-0.0207 ± 0.0933 ± 0.0259	-0.0207 ± 0.0933 ± 0.0259
	0.43 – 0.52	0.00 – 0.24	2.10	0.089	0.458	0.473	0.155	0.817	-0.0104 ± 0.0900 ± 0.0033	-0.0104 ± 0.0900 ± 0.0033
		0.24 – 0.40	2.22	0.088	0.485	0.473	0.319	0.789	0.1032 ± 0.1070 ± 0.0265	0.1032 ± 0.1070 ± 0.0265
		0.40 – 0.57	2.34	0.088	0.515	0.474	0.477	0.759	-0.0241 ± 0.1342 ± 0.0503	-0.0241 ± 0.1342 ± 0.0503
		0.57 – 2.00	2.45	0.088	0.538	0.472	0.773	0.731	-0.0061 ± 0.0992 ± 0.0096	-0.0061 ± 0.0992 ± 0.0096
	0.52 – 0.70	0.00 – 0.24	1.89	0.089	0.410	0.592	0.156	0.856	-0.1812 ± 0.0906 ± 0.0018	-0.1812 ± 0.0906 ± 0.0018
		0.24 – 0.40	1.95	0.089	0.427	0.593	0.320	0.839	0.0103 ± 0.0882 ± 0.0243	0.0103 ± 0.0882 ± 0.0243
		0.40 – 0.57	2.05	0.088	0.450	0.594	0.481	0.817	-0.0148 ± 0.1261 ± 0.0143	-0.0148 ± 0.1261 ± 0.0143
		0.57 – 2.00	2.24	0.088	0.494	0.598	0.781	0.772	0.2392 ± 0.0986 ± 0.0059	0.2392 ± 0.0986 ± 0.0059
0.107 – 0.157	0.20 – 0.34	0.00 – 0.24	3.97	0.128	0.600	0.295	0.156	0.677	0.1842 ± 0.1396 ± 0.0012	0.1842 ± 0.1396 ± 0.0012
		0.24 – 0.40	4.13	0.129	0.622	0.288	0.321	0.648	-0.2775 ± 0.1629 ± 0.0188	-0.2775 ± 0.1629 ± 0.0188
		0.40 – 0.57	4.27	0.128	0.644	0.283	0.481	0.617	-0.1020 ± 0.1280 ± 0.0231	-0.1020 ± 0.1280 ± 0.0231
		0.57 – 2.00	4.24	0.127	0.646	0.288	0.719	0.613	-0.0716 ± 0.1448 ± 0.0286	-0.0716 ± 0.1448 ± 0.0286
	0.34 – 0.43	0.00 – 0.24	3.38	0.130	0.504	0.387	0.152	0.780	0.0103 ± 0.0876 ± 0.0110	0.0103 ± 0.0876 ± 0.0110
		0.24 – 0.40	3.48	0.129	0.523	0.388	0.316	0.759	-0.0274 ± 0.1060 ± 0.0442	-0.0274 ± 0.1060 ± 0.0442
		0.40 – 0.57	3.69	0.128	0.555	0.386	0.477	0.722	0.1727 ± 0.1311 ± 0.0180	0.1727 ± 0.1311 ± 0.0180
		0.57 – 2.00	3.71	0.127	0.563	0.385	0.754	0.712	0.0313 ± 0.1251 ± 0.0260	0.0313 ± 0.1251 ± 0.0260
	0.43 – 0.52	0.00 – 0.24	3.06	0.129	0.457	0.474	0.156	0.820	0.0849 ± 0.0838 ± 0.0235	0.0849 ± 0.0838 ± 0.0235
		0.24 – 0.40	3.14	0.130	0.469	0.475	0.317	0.807	0.0287 ± 0.0932 ± 0.0056	0.0287 ± 0.0932 ± 0.0056
		0.40 – 0.57	3.29	0.129	0.492	0.472	0.478	0.784	-0.0953 ± 0.1329 ± 0.0278	-0.0953 ± 0.1329 ± 0.0278
		0.57 – 2.00	3.45	0.128	0.524	0.473	0.771	0.747	-0.0651 ± 0.1230 ± 0.0483	-0.0651 ± 0.1230 ± 0.0483
	0.52 – 0.70	0.00 – 0.24	2.75	0.129	0.413	0.594	0.154	0.852	0.0072 ± 0.0830 ± 0.0102	0.0072 ± 0.0830 ± 0.0102
		0.24 – 0.40	2.77	0.129	0.415	0.594	0.320	0.848	-0.1072 ± 0.0773 ± 0.0058	-0.1072 ± 0.0773 ± 0.0058
		0.40 – 0.57	2.85	0.130	0.425	0.602	0.479	0.840	0.0595 ± 0.1010 ± 0.0098	0.0595 ± 0.1010 ± 0.0098
		0.57 – 2.00	3.17	0.129	0.476	0.602	0.769	0.788	-0.0006 ± 0.1108 ± 0.0123	-0.0006 ± 0.1108 ± 0.0123
0.157 – 0.600	0.20 – 0.34	0.00 – 0.24	6.65	0.229	0.566	0.301	0.155	0.717	-0.0630 ± 0.1164 ± 0.0160	-0.0630 ± 0.1164 ± 0.0160
		0.24 – 0.40	6.49	0.219	0.579	0.298	0.317	0.703	-0.0654 ± 0.1358 ± 0.0096	-0.0654 ± 0.1358 ± 0.0096
		0.40 – 0.57	6.54	0.211	0.608	0.290	0.476	0.664	-0.0758 ± 0.1623 ± 0.0362	-0.0758 ± 0.1623 ± 0.0362
		0.57 – 2.00	6.59	0.216	0.597	0.292	0.719	0.678	0.2605 ± 0.1980 ± 0.0025	0.2605 ± 0.1980 ± 0.0025
	0.34 – 0.43	0.00 – 0.24	5.84	0.231	0.492	0.386	0.154	0.793	-0.0634 ± 0.0767 ± 0.0206	-0.0634 ± 0.0767 ± 0.0206
		0.24 – 0.40	5.96	0.233	0.499	0.387	0.315	0.786	0.0863 ± 0.0818 ± 0.0263	0.0863 ± 0.0818 ± 0.0263
		0.40 – 0.57	5.97	0.230	0.509	0.389	0.473	0.774	0.1627 ± 0.1193 ± 0.0177	0.1627 ± 0.1193 ± 0.0177
		0.57 – 2.00	6.10	0.235	0.511	0.386	0.764	0.771	0.1106 ± 0.1453 ± 0.0191	0.1106 ± 0.1453 ± 0.0191
	0.43 – 0.52	0.00 – 0.24	5.22	0.228	0.444	0.474	0.153	0.833	-0.0335 ± 0.0742 ± 0.0057	-0.0335 ± 0.0742 ± 0.0057
		0.24 – 0.40	5.38	0.234	0.450	0.473	0.316	0.826	-0.1130 ± 0.0761 ± 0.0032	-0.1130 ± 0.0761 ± 0.0032
		0.40 – 0.57	5.47	0.234	0.458	0.476	0.476	0.818	0.1691 ± 0.1055 ± 0.0026	0.1691 ± 0.1055 ± 0.0026
		0.57 – 2.00	5.60	0.237	0.467	0.476	0.756	0.805	0.0414 ± 0.1358 ± 0.0217	0.0414 ± 0.1358 ± 0.0217
	0.52 – 0.70	0.00 – 0.24	4.95	0.223	0.426	0.593	0.156	0.844	-0.0342 ± 0.0768 ± 0.0087	-0.0342 ± 0.0768 ± 0.0087
		0.24 – 0.40	4.89	0.229	0.411	0.594	0.319	0.855	0.0577 ± 0.0732 ± 0.0045	0.0577 ± 0.0732 ± 0.0045
		0.40 – 0.57	4.88	0.231	0.411	0.599	0.479	0.853	0.0230 ± 0.0874 ± 0.0065	0.0230 ± 0.0874 ± 0.0065
		0.57 – 2.00	5.07	0.233	0.427	0.604	0.749	0.837	-0.0677 ± 0.1049 ± 0.0262	-0.0677 ± 0.1049 ± 0.0262

Table 109. Three-dimensionally binned SFA and CSA amplitudes of the $\sin(2\phi+\phi_S)$ modulation for p as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 7.3%.

5.10 $\cos(\phi + \phi_S)$ modulation

Kinematic bin		Average kinematics						π^+	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(\phi + \phi_S) / \sqrt{2\epsilon(1-\epsilon)} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(\phi + \phi_S) \rangle_{\mathrm{L}\perp}$
x	0.023 – 0.046	1.29	0.036	0.702	0.336	0.486	0.526	0.0080 ± 0.0319 ± 0.0029	0.0073 ± 0.0214 ± 0.0007
	0.046 – 0.067	1.64	0.056	0.567	0.356	0.408	0.700	0.0280 ± 0.0312 ± 0.0019	0.0184 ± 0.0191 ± 0.0004
	0.067 – 0.082	1.98	0.074	0.516	0.366	0.375	0.752	-0.0159 ± 0.0420 ± 0.0012	-0.0142 ± 0.0243 ± 0.0009
	0.082 – 0.105	2.34	0.093	0.489	0.374	0.358	0.778	0.0231 ± 0.0393 ± 0.0014	0.0171 ± 0.0220 ± 0.0011
	0.082 – 0.105	2.34	0.093	0.489	0.374	0.358	0.778	0.0231 ± 0.0393 ± 0.0014	0.0171 ± 0.0220 ± 0.0011
	0.105 – 0.134	2.87	0.118	0.469	0.379	0.348	0.796	0.0494 ± 0.0428 ± 0.0032	0.0241 ± 0.0234 ± 0.0033
	0.134 – 0.186	3.69	0.157	0.456	0.379	0.342	0.811	0.0315 ± 0.0434 ± 0.0046	0.0116 ± 0.0237 ± 0.0038
	0.186 – 0.600	5.71	0.254	0.437	0.375	0.343	0.832	-0.0544 ± 0.0485 ± 0.0149	-0.0280 ± 0.0265 ± 0.0083
z	0.200 – 0.260	2.44	0.087	0.594	0.229	0.344	0.661	-0.0096 ± 0.0269 ± 0.0025	-0.0060 ± 0.0166 ± 0.0001
	0.260 – 0.320	2.46	0.094	0.556	0.289	0.371	0.702	-0.0015 ± 0.0310 ± 0.0024	-0.0033 ± 0.0184 ± 0.0011
	0.320 – 0.380	2.45	0.098	0.533	0.349	0.394	0.725	0.0268 ± 0.0363 ± 0.0004	0.0187 ± 0.0209 ± 0.0025
	0.380 – 0.450	2.45	0.100	0.520	0.413	0.418	0.740	0.0587 ± 0.0400 ± 0.0010	0.0256 ± 0.0227 ± 0.0036
	0.450 – 0.520	2.44	0.101	0.508	0.483	0.441	0.753	-0.0174 ± 0.0479 ± 0.0050	-0.0143 ± 0.0267 ± 0.0055
	0.450 – 0.520	2.44	0.101	0.508	0.483	0.441	0.753	-0.0174 ± 0.0479 ± 0.0050	-0.0143 ± 0.0267 ± 0.0055
	0.520 – 0.600	2.43	0.102	0.499	0.558	0.460	0.763	0.0174 ± 0.0543 ± 0.0023	0.0101 ± 0.0299 ± 0.0036
	0.600 – 0.700	2.41	0.104	0.481	0.647	0.466	0.785	0.0756 ± 0.0600 ± 0.0081	0.0435 ± 0.0325 ± 0.0062
	0.700 – 0.760	2.41	0.107	0.457	0.729	0.453	0.813	-0.0368 ± 0.0943 ± 0.0117	-0.0216 ± 0.0495 ± 0.0072
	0.760 – 0.840	2.35	0.108	0.434	0.798	0.433	0.837	0.0572 ± 0.0982 ± 0.0147	0.0223 ± 0.0500 ± 0.0072
	0.840 – 1.200	2.31	0.116	0.394	0.916	0.376	0.872	0.1749 ± 0.0979 ± 0.0131	0.0770 ± 0.0463 ± 0.0063
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.56	0.110	0.460	0.341	0.110	0.813	0.0069 ± 0.0409 ± 0.0077	0.0015 ± 0.0216 ± 0.0039
	0.170 – 0.250	2.56	0.108	0.489	0.350	0.211	0.779	0.0439 ± 0.0408 ± 0.0041	0.0245 ± 0.0224 ± 0.0034
	0.250 – 0.310	2.52	0.103	0.514	0.354	0.280	0.750	-0.0305 ± 0.0449 ± 0.0020	-0.0241 ± 0.0251 ± 0.0035
	0.310 – 0.380	2.46	0.097	0.540	0.355	0.345	0.721	-0.0271 ± 0.0409 ± 0.0075	-0.0118 ± 0.0235 ± 0.0062
	0.310 – 0.380	2.46	0.097	0.540	0.355	0.345	0.721	-0.0271 ± 0.0409 ± 0.0075	-0.0118 ± 0.0235 ± 0.0062
	0.380 – 0.520	2.39	0.090	0.570	0.356	0.446	0.686	-0.0563 ± 0.0302 ± 0.0075	-0.0330 ± 0.0180 ± 0.0066
	0.520 – 0.690	2.34	0.084	0.601	0.373	0.594	0.648	0.0377 ± 0.0343 ± 0.0068	0.0297 ± 0.0213 ± 0.0076
	0.690 – 2.000	2.30	0.076	0.642	0.429	0.849	0.597	0.1344 ± 0.0414 ± 0.0078	0.0802 ± 0.0265 ± 0.0105

Table 110. One-dimensionally binned SFA and CSA amplitudes of the $\cos(\phi + \phi_S)$ modulation for π^+ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin		Average kinematics						π^0	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(\phi+\phi_S)/\sqrt{2\epsilon(1-\epsilon)} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(\phi+\phi_S) \rangle_{\mathrm{L}\perp}$
x	0.023 – 0.046	1.30	0.036	0.712	0.325	0.492	0.512	-0.0105 ± 0.0872 ± 0.0415	0.0058 ± 0.0585 ± 0.0264
	0.046 – 0.067	1.72	0.056	0.597	0.352	0.406	0.665	-0.0973 ± 0.0857 ± 0.0414	-0.0642 ± 0.0528 ± 0.0261
	0.067 – 0.082	2.14	0.074	0.558	0.366	0.374	0.708	0.1145 ± 0.1151 ± 0.0413	0.0338 ± 0.0676 ± 0.0262
	0.082 – 0.105	2.58	0.093	0.538	0.372	0.353	0.731	0.1056 ± 0.1109 ± 0.0416	0.0525 ± 0.0633 ± 0.0266
	0.082 – 0.105	2.58	0.093	0.538	0.372	0.353	0.731	0.1056 ± 0.1109 ± 0.0416	0.0525 ± 0.0633 ± 0.0266
	0.105 – 0.134	3.19	0.118	0.522	0.378	0.338	0.749	-0.0443 ± 0.1263 ± 0.0414	-0.0188 ± 0.0708 ± 0.0264
	0.134 – 0.186	4.10	0.156	0.507	0.380	0.323	0.766	-0.0182 ± 0.1206 ± 0.0424	-0.0295 ± 0.0677 ± 0.0269
	0.186 – 0.600	6.14	0.249	0.479	0.386	0.326	0.797	-0.2179 ± 0.1419 ± 0.0423	-0.1092 ± 0.0803 ± 0.0267
z	0.200 – 0.260	2.45	0.078	0.648	0.229	0.337	0.598	-0.0179 ± 0.0992 ± 0.0809	-0.0108 ± 0.0649 ± 0.0453
	0.260 – 0.320	2.49	0.085	0.609	0.289	0.372	0.645	0.0072 ± 0.0929 ± 0.0809	-0.0002 ± 0.0584 ± 0.0453
	0.320 – 0.380	2.52	0.090	0.581	0.348	0.401	0.679	-0.0833 ± 0.0959 ± 0.0810	-0.0498 ± 0.0584 ± 0.0453
	0.380 – 0.450	2.53	0.095	0.558	0.413	0.427	0.705	-0.1378 ± 0.0969 ± 0.0810	-0.0803 ± 0.0568 ± 0.0455
	0.450 – 0.520	2.55	0.099	0.537	0.483	0.450	0.728	0.0002 ± 0.1055 ± 0.0814	-0.0094 ± 0.0605 ± 0.0458
	0.450 – 0.520	2.55	0.099	0.537	0.483	0.450	0.728	0.0002 ± 0.1055 ± 0.0814	-0.0094 ± 0.0605 ± 0.0458
	0.520 – 0.600	2.57	0.102	0.517	0.557	0.469	0.750	0.2881 ± 0.1134 ± 0.0814	0.1676 ± 0.0630 ± 0.0458
	0.600 – 0.700	2.59	0.106	0.496	0.645	0.483	0.774	0.0650 ± 0.1271 ± 0.0810	0.0305 ± 0.0683 ± 0.0455
	0.700 – 0.760	2.61	0.112	0.472	0.728	0.494	0.799	-0.1532 ± 0.2045 ± 0.0815	-0.0231 ± 0.1082 ± 0.0457
	0.760 – 0.840	2.66	0.116	0.457	0.796	0.488	0.815	0.3604 ± 0.2294 ± 0.0825	0.2172 ± 0.1178 ± 0.0463
	0.840 – 1.200	2.56	0.121	0.418	0.908	0.478	0.849	0.3522 ± 0.2704 ± 0.0826	0.2141 ± 0.1313 ± 0.0459
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.82	0.114	0.481	0.338	0.111	0.799	-0.0409 ± 0.1547 ± 0.0587	-0.0199 ± 0.0806 ± 0.0374
	0.170 – 0.250	2.69	0.103	0.529	0.340	0.211	0.745	-0.3315 ± 0.1357 ± 0.0594	-0.1742 ± 0.0740 ± 0.0379
	0.250 – 0.310	2.59	0.095	0.563	0.343	0.280	0.705	0.0324 ± 0.1394 ± 0.0588	-0.0036 ± 0.0775 ± 0.0382
	0.310 – 0.380	2.49	0.088	0.591	0.347	0.345	0.668	0.3097 ± 0.1270 ± 0.0585	0.1738 ± 0.0707 ± 0.0376
	0.310 – 0.380	2.49	0.088	0.591	0.347	0.345	0.668	0.3097 ± 0.1270 ± 0.0585	0.1738 ± 0.0707 ± 0.0376
	0.380 – 0.520	2.39	0.081	0.624	0.353	0.446	0.625	-0.0904 ± 0.0849 ± 0.0589	-0.0546 ± 0.0502 ± 0.0380
	0.520 – 0.690	2.30	0.074	0.652	0.371	0.595	0.587	0.0474 ± 0.0841 ± 0.0589	0.0453 ± 0.0524 ± 0.0380
	0.690 – 2.000	2.27	0.071	0.675	0.428	0.849	0.554	0.0321 ± 0.0873 ± 0.0586	0.0242 ± 0.0561 ± 0.0379

Table 111. One-dimensionally binned SFA and CSA amplitudes of the $\cos(\phi+\phi_S)$ modulation for π^0 as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin		Average kinematics						π^-	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(\phi+\phi_S)/\sqrt{2\epsilon(1-\epsilon)} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(\phi+\phi_S) \rangle_{\mathrm{L}\perp}$
x	0.023 – 0.046	1.29	0.036	0.704	0.330	0.481	0.524	0.0223 ± 0.0359 ± 0.0011	0.0145 ± 0.0242 ± 0.0006
	0.046 – 0.067	1.64	0.056	0.568	0.350	0.402	0.699	0.0093 ± 0.0363 ± 0.0033	0.0029 ± 0.0223 ± 0.0037
	0.067 – 0.082	1.98	0.074	0.515	0.359	0.369	0.752	-0.0923 ± 0.0493 ± 0.0035	-0.0591 ± 0.0286 ± 0.0033
	0.082 – 0.105	2.33	0.093	0.487	0.366	0.354	0.779	0.0019 ± 0.0468 ± 0.0025	-0.0044 ± 0.0262 ± 0.0020
	0.082 – 0.105	2.33	0.093	0.487	0.366	0.354	0.779	0.0019 ± 0.0468 ± 0.0025	-0.0044 ± 0.0262 ± 0.0020
	0.105 – 0.134	2.86	0.118	0.468	0.369	0.348	0.797	0.0426 ± 0.0518 ± 0.0007	0.0246 ± 0.0285 ± 0.0002
	0.134 – 0.186	3.66	0.156	0.454	0.369	0.342	0.813	0.0135 ± 0.0536 ± 0.0014	0.0110 ± 0.0292 ± 0.0010
	0.186 – 0.600	5.66	0.253	0.434	0.364	0.349	0.835	0.0324 ± 0.0612 ± 0.0050	0.0127 ± 0.0335 ± 0.0056
z	0.200 – 0.260	2.39	0.084	0.598	0.229	0.350	0.656	0.0251 ± 0.0305 ± 0.0036	0.0154 ± 0.0189 ± 0.0034
	0.260 – 0.320	2.38	0.091	0.559	0.289	0.379	0.698	-0.0176 ± 0.0360 ± 0.0018	-0.0108 ± 0.0214 ± 0.0023
	0.320 – 0.380	2.36	0.094	0.536	0.348	0.403	0.721	0.0184 ± 0.0427 ± 0.0034	0.0113 ± 0.0248 ± 0.0027
	0.380 – 0.450	2.37	0.097	0.521	0.413	0.422	0.738	0.0177 ± 0.0487 ± 0.0032	0.0093 ± 0.0277 ± 0.0018
	0.450 – 0.520	2.35	0.098	0.509	0.483	0.437	0.751	-0.0654 ± 0.0596 ± 0.0029	-0.0448 ± 0.0335 ± 0.0012
	0.450 – 0.520	2.35	0.098	0.509	0.483	0.437	0.751	-0.0654 ± 0.0596 ± 0.0029	-0.0448 ± 0.0335 ± 0.0012
	0.520 – 0.600	2.31	0.098	0.498	0.558	0.449	0.764	0.0122 ± 0.0678 ± 0.0042	0.0192 ± 0.0374 ± 0.0012
	0.600 – 0.700	2.27	0.099	0.479	0.646	0.438	0.787	-0.0161 ± 0.0779 ± 0.0070	-0.0239 ± 0.0422 ± 0.0011
	0.700 – 0.760	2.19	0.099	0.452	0.729	0.416	0.818	0.2233 ± 0.1266 ± 0.0007	0.0949 ± 0.0662 ± 0.0015
	0.760 – 0.840	2.15	0.101	0.432	0.798	0.389	0.839	-0.1716 ± 0.1287 ± 0.0036	-0.1007 ± 0.0653 ± 0.0036
	0.840 – 1.200	2.08	0.104	0.399	0.906	0.338	0.868	0.0680 ± 0.1346 ± 0.0043	0.0551 ± 0.0644 ± 0.0012
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.48	0.107	0.462	0.337	0.110	0.811	-0.0251 ± 0.0481 ± 0.0005	-0.0116 ± 0.0256 ± 0.0011
	0.170 – 0.250	2.47	0.103	0.492	0.345	0.211	0.775	0.0136 ± 0.0483 ± 0.0032	0.0035 ± 0.0266 ± 0.0013
	0.250 – 0.310	2.43	0.098	0.520	0.350	0.280	0.743	0.0412 ± 0.0533 ± 0.0019	0.0247 ± 0.0299 ± 0.0013
	0.310 – 0.380	2.36	0.092	0.546	0.349	0.345	0.714	0.0545 ± 0.0484 ± 0.0010	0.0179 ± 0.0281 ± 0.0010
	0.310 – 0.380	2.36	0.092	0.546	0.349	0.345	0.714	0.0545 ± 0.0484 ± 0.0010	0.0179 ± 0.0281 ± 0.0010
	0.380 – 0.520	2.30	0.086	0.576	0.347	0.446	0.678	0.0338 ± 0.0356 ± 0.0014	0.0187 ± 0.0215 ± 0.0004
	0.520 – 0.690	2.28	0.081	0.606	0.359	0.594	0.640	0.0145 ± 0.0405 ± 0.0010	0.0099 ± 0.0254 ± 0.0005
	0.690 – 2.000	2.26	0.076	0.643	0.409	0.846	0.594	-0.0924 ± 0.0493 ± 0.0049	-0.0598 ± 0.0318 ± 0.0035

Table 112. One-dimensionally binned SFA and CSA amplitudes of the $\cos(\phi+\phi_S)$ modulation for π^- as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin		Average kinematics						K^+	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(\phi+\phi_S)/\sqrt{2\epsilon(1-\epsilon)} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(\phi+\phi_S) \rangle_{\mathrm{L}\perp}$
x	0.023 – 0.046	1.29	0.036	0.704	0.363	0.527	0.524	0.1724 ± 0.0838 ± 0.0241	0.1070 ± 0.0561 ± 0.0196
	0.046 – 0.067	1.65	0.056	0.571	0.384	0.436	0.696	0.0592 ± 0.0813 ± 0.0199	0.0204 ± 0.0497 ± 0.0153
	0.067 – 0.082	2.01	0.074	0.524	0.392	0.398	0.743	-0.1569 ± 0.1076 ± 0.0050	-0.0977 ± 0.0624 ± 0.0048
	0.082 – 0.105	2.39	0.093	0.498	0.401	0.378	0.769	-0.0536 ± 0.0999 ± 0.0062	-0.0394 ± 0.0566 ± 0.0052
	0.082 – 0.105	2.39	0.093	0.498	0.401	0.378	0.769	-0.0536 ± 0.0999 ± 0.0062	-0.0394 ± 0.0566 ± 0.0052
	0.105 – 0.134	2.93	0.118	0.479	0.404	0.366	0.788	-0.0356 ± 0.1079 ± 0.0002	-0.0011 ± 0.0600 ± 0.0018
	0.134 – 0.186	3.79	0.157	0.468	0.408	0.358	0.801	-0.0257 ± 0.1079 ± 0.0039	-0.0096 ± 0.0601 ± 0.0047
	0.186 – 0.600	5.86	0.252	0.451	0.410	0.357	0.822	-0.0728 ± 0.1158 ± 0.0104	-0.0447 ± 0.0640 ± 0.0003
z	0.200 – 0.260	2.46	0.085	0.603	0.228	0.351	0.652	-0.0458 ± 0.0822 ± 0.0130	-0.0355 ± 0.0520 ± 0.0093
	0.260 – 0.320	2.49	0.092	0.569	0.287	0.378	0.688	-0.0747 ± 0.0829 ± 0.0202	-0.0446 ± 0.0505 ± 0.0110
	0.320 – 0.380	2.53	0.097	0.548	0.347	0.403	0.711	0.0743 ± 0.0875 ± 0.0214	0.0093 ± 0.0517 ± 0.0091
	0.380 – 0.450	2.56	0.101	0.532	0.412	0.425	0.730	0.0833 ± 0.0950 ± 0.0255	0.0557 ± 0.0544 ± 0.0098
	0.450 – 0.520	2.55	0.102	0.522	0.482	0.458	0.739	0.0789 ± 0.1104 ± 0.0199	0.0212 ± 0.0613 ± 0.0048
	0.450 – 0.520	2.55	0.102	0.522	0.482	0.458	0.739	0.0789 ± 0.1104 ± 0.0199	0.0212 ± 0.0613 ± 0.0048
	0.520 – 0.600	2.54	0.104	0.515	0.556	0.484	0.748	0.0765 ± 0.1171 ± 0.0271	0.0474 ± 0.0641 ± 0.0070
	0.600 – 0.700	2.61	0.108	0.500	0.645	0.506	0.766	0.1549 ± 0.1292 ± 0.0247	0.0652 ± 0.0702 ± 0.0042
	0.700 – 0.760	2.63	0.112	0.474	0.727	0.506	0.797	0.0930 ± 0.1999 ± 0.0305	0.0559 ± 0.1072 ± 0.0075
	0.760 – 0.840	2.62	0.116	0.448	0.796	0.501	0.825	0.0496 ± 0.2032 ± 0.0338	-0.0157 ± 0.1058 ± 0.0110
	0.840 – 1.200	2.47	0.119	0.411	0.903	0.469	0.858	0.0632 ± 0.2347 ± 0.0129	0.0162 ± 0.1145 ± 0.0004
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.68	0.113	0.468	0.362	0.111	0.807	-0.0684 ± 0.1039 ± 0.0120	-0.0285 ± 0.0560 ± 0.0090
	0.170 – 0.250	2.66	0.109	0.495	0.372	0.211	0.775	0.0487 ± 0.1065 ± 0.0243	0.0414 ± 0.0595 ± 0.0108
	0.250 – 0.310	2.66	0.106	0.517	0.377	0.280	0.750	-0.1545 ± 0.1180 ± 0.0279	-0.0803 ± 0.0662 ± 0.0099
	0.310 – 0.380	2.56	0.099	0.540	0.381	0.345	0.723	-0.1119 ± 0.1101 ± 0.0157	-0.0813 ± 0.0630 ± 0.0080
	0.310 – 0.380	2.56	0.099	0.540	0.381	0.345	0.723	-0.1119 ± 0.1101 ± 0.0157	-0.0813 ± 0.0630 ± 0.0080
	0.380 – 0.520	2.49	0.093	0.565	0.387	0.447	0.692	0.0637 ± 0.0806 ± 0.0049	0.0331 ± 0.0477 ± 0.0019
	0.520 – 0.690	2.41	0.087	0.593	0.402	0.597	0.658	0.1598 ± 0.0868 ± 0.0204	0.0949 ± 0.0534 ± 0.0133
	0.690 – 2.000	2.29	0.076	0.642	0.451	0.867	0.597	0.0481 ± 0.0912 ± 0.0292	0.0094 ± 0.0578 ± 0.0268

Table 113. One-dimensionally binned SFA and CSA amplitudes of the $\cos(\phi+\phi_S)$ modulation for K^+ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin		Average kinematics						K^-	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(\phi+\phi_S)/\sqrt{2\epsilon(1-\epsilon)} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(\phi+\phi_S) \rangle_{\mathrm{L}\perp}$
x	0.023 – 0.046	1.30	0.036	0.711	0.338	0.503	0.513	0.1175 ± 0.1119 ± 0.0014	0.0775 ± 0.0749 ± 0.0060
	0.046 – 0.067	1.67	0.056	0.578	0.355	0.417	0.687	0.1443 ± 0.1173 ± 0.0160	0.1030 ± 0.0729 ± 0.0108
	0.067 – 0.082	2.04	0.074	0.533	0.361	0.381	0.734	0.3202 ± 0.1623 ± 0.0385	0.1796 ± 0.0963 ± 0.0187
	0.082 – 0.105	2.44	0.093	0.510	0.367	0.367	0.758	0.0800 ± 0.1529 ± 0.0361	0.0567 ± 0.0880 ± 0.0141
	0.082 – 0.105	2.44	0.093	0.510	0.367	0.367	0.758	0.0800 ± 0.1529 ± 0.0361	0.0567 ± 0.0880 ± 0.0141
	0.105 – 0.134	3.01	0.118	0.493	0.366	0.362	0.775	-0.2484 ± 0.1706 ± 0.0475	-0.1061 ± 0.0977 ± 0.0146
	0.134 – 0.186	3.89	0.157	0.480	0.365	0.356	0.790	-0.1599 ± 0.1776 ± 0.0669	-0.0960 ± 0.0993 ± 0.0224
	0.186 – 0.600	5.82	0.251	0.451	0.363	0.364	0.821	-0.2335 ± 0.2098 ± 0.0524	-0.1071 ± 0.1174 ± 0.0168
z	0.200 – 0.260	2.41	0.082	0.616	0.227	0.362	0.636	0.0035 ± 0.1066 ± 0.0148	0.0131 ± 0.0677 ± 0.0138
	0.260 – 0.320	2.41	0.087	0.582	0.287	0.389	0.673	0.0481 ± 0.1153 ± 0.0180	0.0341 ± 0.0708 ± 0.0117
	0.320 – 0.380	2.40	0.091	0.557	0.347	0.419	0.701	0.0516 ± 0.1342 ± 0.0179	0.0477 ± 0.0801 ± 0.0083
	0.380 – 0.450	2.37	0.092	0.542	0.411	0.440	0.718	0.1815 ± 0.1487 ± 0.0259	0.0908 ± 0.0861 ± 0.0103
	0.450 – 0.520	2.29	0.091	0.534	0.482	0.460	0.726	0.4112 ± 0.1819 ± 0.0361	0.2750 ± 0.1030 ± 0.0153
	0.450 – 0.520	2.29	0.091	0.534	0.482	0.460	0.726	0.4112 ± 0.1819 ± 0.0361	0.2750 ± 0.1030 ± 0.0153
	0.520 – 0.600	2.34	0.093	0.531	0.556	0.465	0.729	-0.1956 ± 0.2150 ± 0.0203	-0.1244 ± 0.1201 ± 0.0061
	0.600 – 0.700	2.33	0.094	0.520	0.642	0.493	0.744	-0.2499 ± 0.2572 ± 0.0400	-0.1776 ± 0.1458 ± 0.0133
	0.700 – 0.760	2.28	0.093	0.506	0.726	0.500	0.766	-0.0597 ± 0.5237 ± 0.0495	0.1041 ± 0.2859 ± 0.0146
	0.760 – 0.840	2.30	0.096	0.482	0.793	0.464	0.795	-1.5258 ± 0.7240 ± 0.0387	-0.9552 ± 0.4606 ± 0.0088
$P_{h\perp}$ [GeV]	0.000 – 0.170	2.47	0.103	0.477	0.337	0.111	0.797	0.0194 ± 0.1597 ± 0.0701	0.0247 ± 0.0873 ± 0.0374
	0.170 – 0.250	2.48	0.100	0.513	0.346	0.210	0.756	0.1935 ± 0.1611 ± 0.0409	0.1192 ± 0.0910 ± 0.0284
	0.250 – 0.310	2.48	0.096	0.540	0.346	0.280	0.724	-0.1672 ± 0.1827 ± 0.0335	-0.1064 ± 0.1043 ± 0.0267
	0.310 – 0.380	2.39	0.089	0.566	0.351	0.345	0.692	0.1364 ± 0.1667 ± 0.0090	0.1011 ± 0.0979 ± 0.0132
	0.310 – 0.380	2.39	0.089	0.566	0.351	0.345	0.692	0.1364 ± 0.1667 ± 0.0090	0.1011 ± 0.0979 ± 0.0132
	0.380 – 0.520	2.32	0.084	0.592	0.348	0.447	0.661	0.0566 ± 0.1188 ± 0.0034	0.0506 ± 0.0727 ± 0.0061
	0.520 – 0.690	2.31	0.080	0.620	0.358	0.597	0.625	-0.0009 ± 0.1288 ± 0.0125	-0.0236 ± 0.0814 ± 0.0102
	0.690 – 2.000	2.26	0.073	0.661	0.409	0.856	0.572	0.0554 ± 0.1395 ± 0.0182	0.0369 ± 0.0903 ± 0.0220

Table 114. One-dimensionally binned SFA and CSA amplitudes of the $\cos(\phi+\phi_S)$ modulation for K^- as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin		Average kinematics						p	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(\phi+\phi_S)/\sqrt{2\epsilon(1-\epsilon)} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(\phi+\phi_S) \rangle_{\mathrm{L}\perp}$
x	0.023 – 0.040	1.24	0.033	0.738	0.354	0.550	0.475	-0.3150 ± 0.1123 ± 0.0122	-0.2026 ± 0.0770 ± 0.0129
	0.040 – 0.057	1.54	0.048	0.619	0.395	0.490	0.640	-0.0911 ± 0.0980 ± 0.0101	-0.0497 ± 0.0628 ± 0.0125
	0.057 – 0.075	1.90	0.066	0.561	0.424	0.447	0.706	-0.0300 ± 0.1070 ± 0.0143	-0.0161 ± 0.0642 ± 0.0010
	0.075 – 0.098	2.36	0.086	0.533	0.439	0.430	0.735	0.1467 ± 0.1119 ± 0.0288	0.0986 ± 0.0646 ± 0.0087
	0.075 – 0.098	2.36	0.086	0.533	0.439	0.430	0.735	0.1467 ± 0.1119 ± 0.0288	0.0986 ± 0.0646 ± 0.0087
	0.098 – 0.136	3.06	0.115	0.514	0.449	0.406	0.757	0.0788 ± 0.1049 ± 0.0269	0.0382 ± 0.0595 ± 0.0088
	0.136 – 0.185	4.04	0.158	0.496	0.457	0.390	0.777	-0.1418 ± 0.1267 ± 0.0548	-0.0686 ± 0.0713 ± 0.0224
	0.185 – 0.600	6.13	0.257	0.464	0.471	0.383	0.811	-0.0364 ± 0.1279 ± 0.0436	-0.0256 ± 0.0702 ± 0.0208
z	0.200 – 0.270	2.30	0.062	0.739	0.239	0.477	0.477	-0.3137 ± 0.1067 ± 0.0154	-0.2088 ± 0.0740 ± 0.0149
	0.270 – 0.340	2.57	0.081	0.643	0.306	0.456	0.613	-0.1648 ± 0.0882 ± 0.0144	-0.1009 ± 0.0575 ± 0.0156
	0.340 – 0.410	2.64	0.093	0.583	0.375	0.443	0.683	0.0833 ± 0.0909 ± 0.0287	0.0612 ± 0.0549 ± 0.0226
	0.410 – 0.470	2.66	0.102	0.544	0.439	0.446	0.723	0.0236 ± 0.1098 ± 0.0262	0.0068 ± 0.0624 ± 0.0178
	0.470 – 0.530	2.68	0.109	0.512	0.499	0.435	0.757	-0.0063 ± 0.1236 ± 0.0288	-0.0089 ± 0.0673 ± 0.0154
	0.470 – 0.530	2.68	0.109	0.512	0.499	0.435	0.757	-0.0063 ± 0.1236 ± 0.0288	-0.0089 ± 0.0673 ± 0.0154
	0.530 – 0.610	2.64	0.113	0.485	0.567	0.452	0.781	0.0426 ± 0.1347 ± 0.0129	0.0532 ± 0.0715 ± 0.0062
	0.610 – 0.700	2.63	0.119	0.455	0.650	0.463	0.810	0.1359 ± 0.1684 ± 0.0085	0.0485 ± 0.0868 ± 0.0050
	0.700 – 0.780	2.57	0.123	0.423	0.735	0.477	0.841	-0.2357 ± 0.2643 ± 0.0045	-0.1254 ± 0.1329 ± 0.0029
	0.780 – 0.880	2.54	0.130	0.389	0.821	0.490	0.872	0.1624 ± 0.3969 ± 0.0014	0.0580 ± 0.1879 ± 0.0023
	0.880 – 1.200	2.45	0.136	0.353	0.938	0.505	0.900	-0.3491 ± 0.7647 ± 0.0714	-0.2901 ± 0.3323 ± 0.0267
$P_{h\perp}$ [GeV]	0.000 – 0.230	2.88	0.113	0.510	0.435	0.150	0.765	-0.0569 ± 0.1001 ± 0.0186	-0.0070 ± 0.0558 ± 0.0045
	0.230 – 0.340	2.76	0.106	0.543	0.427	0.286	0.723	0.0288 ± 0.1017 ± 0.0075	0.0241 ± 0.0577 ± 0.0010
	0.340 – 0.430	2.62	0.097	0.569	0.416	0.385	0.691	-0.0891 ± 0.1104 ± 0.0097	-0.0584 ± 0.0640 ± 0.0005
	0.430 – 0.520	2.54	0.091	0.590	0.413	0.474	0.666	0.0823 ± 0.1142 ± 0.0061	0.0559 ± 0.0680 ± 0.0054
	0.430 – 0.520	2.54	0.091	0.590	0.413	0.474	0.666	0.0823 ± 0.1142 ± 0.0061	0.0559 ± 0.0680 ± 0.0054
	0.520 – 0.620	2.44	0.085	0.608	0.406	0.568	0.644	-0.1228 ± 0.1153 ± 0.0002	-0.0742 ± 0.0705 ± 0.0115
	0.620 – 0.740	2.35	0.080	0.620	0.405	0.676	0.628	-0.2422 ± 0.1256 ± 0.0075	-0.1396 ± 0.0783 ± 0.0154
	0.740 – 2.000	2.31	0.078	0.633	0.432	0.904	0.609	-0.0242 ± 0.1155 ± 0.0210	-0.0178 ± 0.0735 ± 0.0233

Table 115. One-dimensionally binned SFA and CSA amplitudes of the $\cos(\phi+\phi_S)$ modulation for p as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin		Average kinematics						$\bar{p}$	
		$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(\phi+\phi_S)/\sqrt{2\epsilon(1-\epsilon)} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(\phi+\phi_S) \rangle_{\mathrm{L}\perp}$
x	0.023 – 0.040	1.26	0.032	0.759	0.335	0.539	0.442	0.2842 ± 0.2145 ± 0.0114	0.2007 ± 0.1462 ± 0.0053
	0.040 – 0.057	1.65	0.048	0.666	0.360	0.492	0.579	0.1642 ± 0.2259 ± 0.0404	0.0910 ± 0.1482 ± 0.0266
	0.057 – 0.075	2.12	0.065	0.628	0.372	0.472	0.626	-0.0699 ± 0.2590 ± 0.0560	-0.0737 ± 0.1650 ± 0.0354
	0.075 – 0.098	2.69	0.085	0.608	0.377	0.450	0.655	-0.1790 ± 0.2892 ± 0.0630	-0.0947 ± 0.1825 ± 0.0388
	0.075 – 0.098	2.69	0.085	0.608	0.377	0.450	0.655	-0.1790 ± 0.2892 ± 0.0630	-0.0947 ± 0.1825 ± 0.0388
	0.098 – 0.136	3.48	0.115	0.588	0.385	0.429	0.678	-0.2116 ± 0.2827 ± 0.0563	-0.1471 ± 0.1756 ± 0.0300
	0.136 – 0.185	4.58	0.158	0.562	0.385	0.399	0.712	-0.2145 ± 0.3720 ± 0.0511	-0.1013 ± 0.2271 ± 0.0227
	0.185 – 0.600	6.60	0.243	0.531	0.406	0.383	0.748	0.5531 ± 0.4269 ± 0.0597	0.2889 ± 0.2528 ± 0.0252
z	0.200 – 0.270	2.25	0.060	0.750	0.238	0.471	0.459	0.1938 ± 0.2083 ± 0.0223	0.1323 ± 0.1433 ± 0.0130
	0.270 – 0.340	2.48	0.074	0.679	0.304	0.476	0.562	0.1744 ± 0.1829 ± 0.0322	0.1150 ± 0.1210 ± 0.0199
	0.340 – 0.410	2.43	0.079	0.634	0.373	0.482	0.618	0.2229 ± 0.2270 ± 0.0258	0.1330 ± 0.1428 ± 0.0147
	0.410 – 0.470	2.43	0.085	0.595	0.437	0.470	0.665	-0.5665 ± 0.3207 ± 0.0082	-0.3249 ± 0.1924 ± 0.0026
	0.470 – 0.530	2.41	0.085	0.583	0.498	0.478	0.678	-0.1942 ± 0.3993 ± 0.0035	-0.1122 ± 0.2390 ± 0.0032
	0.470 – 0.530	2.41	0.085	0.583	0.498	0.478	0.678	-0.1942 ± 0.3993 ± 0.0035	-0.1122 ± 0.2390 ± 0.0032
	0.530 – 0.610	2.26	0.083	0.567	0.563	0.492	0.698	-0.0139 ± 0.4569 ± 0.0063	-0.1156 ± 0.2681 ± 0.0052
	0.610 – 0.700	2.40	0.095	0.527	0.645	0.502	0.745	-0.1803 ± 0.6619 ± 0.0237	-0.0324 ± 0.3770 ± 0.0179
$P_{h\perp}$ [GeV]	0.000 – 0.230	2.79	0.097	0.586	0.378	0.151	0.683	-0.3910 ± 0.2815 ± 0.1054	-0.2697 ± 0.1718 ± 0.0683
	0.230 – 0.340	2.53	0.083	0.630	0.364	0.288	0.622	0.1492 ± 0.2913 ± 0.1055	0.1453 ± 0.1781 ± 0.0738
	0.340 – 0.430	2.37	0.075	0.652	0.358	0.385	0.592	-0.1241 ± 0.2888 ± 0.0250	-0.0366 ± 0.1789 ± 0.0326
	0.430 – 0.520	2.35	0.073	0.667	0.351	0.475	0.572	0.0533 ± 0.2629 ± 0.0187	0.0121 ± 0.1696 ± 0.0030
	0.430 – 0.520	2.35	0.073	0.667	0.351	0.475	0.572	0.0533 ± 0.2629 ± 0.0187	0.0121 ± 0.1696 ± 0.0030
	0.520 – 0.620	2.30	0.070	0.678	0.355	0.569	0.557	-0.1096 ± 0.2732 ± 0.0177	-0.0303 ± 0.1799 ± 0.0110
	0.620 – 0.740	2.21	0.066	0.687	0.355	0.675	0.544	0.0648 ± 0.2775 ± 0.0472	0.0509 ± 0.1829 ± 0.0363
	0.740 – 2.000	2.12	0.062	0.698	0.386	0.886	0.527	0.3605 ± 0.2645 ± 0.0605	0.2074 ± 0.1743 ± 0.0533

Table 116. One-dimensionally binned SFA and CSA amplitudes of the $\cos(\phi+\phi_S)$ modulation for $\bar{p}$ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. Hadrons with $z > 0.7$ are only included in the z binning. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin			Average kinematics						π^+	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(\phi+\phi_S)/\sqrt{2\epsilon(1-\epsilon)} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(\phi+\phi_S) \rangle_{\mathrm{L}\perp}$
0.023 – 0.072	0.20 – 0.28	0.00 – 0.23	1.46	0.052	0.561	0.236	0.151	0.708	-0.0354 ± 0.0871 ± 0.0024	-0.0354 ± 0.0871 ± 0.0024
		0.23 – 0.36	1.51	0.048	0.632	0.235	0.298	0.619	-0.0157 ± 0.0702 ± 0.0014	-0.0157 ± 0.0702 ± 0.0014
		0.36 – 0.54	1.54	0.046	0.673	0.237	0.443	0.564	-0.0191 ± 0.0556 ± 0.0009	-0.0191 ± 0.0556 ± 0.0009
		0.54 – 2.00	1.59	0.043	0.730	0.242	0.655	0.483	-0.0118 ± 0.0721 ± 0.0004	-0.0118 ± 0.0721 ± 0.0004
	0.28 – 0.37	0.00 – 0.23	1.43	0.054	0.525	0.320	0.150	0.750	-0.0617 ± 0.1149 ± 0.0071	-0.0617 ± 0.1149 ± 0.0071
		0.23 – 0.36	1.48	0.050	0.595	0.320	0.297	0.665	-0.1689 ± 0.1313 ± 0.0008	-0.1689 ± 0.1313 ± 0.0008
		0.36 – 0.54	1.52	0.047	0.640	0.320	0.449	0.607	0.0396 ± 0.0736 ± 0.0049	0.0396 ± 0.0736 ± 0.0049
		0.54 – 2.00	1.56	0.045	0.692	0.323	0.699	0.536	0.0647 ± 0.0679 ± 0.0007	0.0647 ± 0.0679 ± 0.0007
	0.37 – 0.49	0.00 – 0.23	1.40	0.055	0.504	0.422	0.151	0.775	-0.0786 ± 0.1461 ± 0.0054	-0.0786 ± 0.1461 ± 0.0054
		0.23 – 0.36	1.45	0.051	0.563	0.422	0.298	0.705	0.2782 ± 0.1520 ± 0.0036	0.2782 ± 0.1520 ± 0.0036
		0.36 – 0.54	1.49	0.049	0.609	0.423	0.447	0.648	-0.0119 ± 0.1161 ± 0.0069	-0.0119 ± 0.1161 ± 0.0069
		0.54 – 2.00	1.54	0.046	0.668	0.425	0.747	0.569	0.0954 ± 0.0714 ± 0.0008	0.0954 ± 0.0714 ± 0.0008
	0.49 – 0.70	0.00 – 0.23	1.38	0.056	0.488	0.579	0.151	0.793	0.0576 ± 0.1841 ± 0.0086	0.0576 ± 0.1841 ± 0.0086
		0.23 – 0.36	1.41	0.053	0.529	0.578	0.298	0.745	0.1628 ± 0.1633 ± 0.0018	0.1628 ± 0.1633 ± 0.0018
		0.36 – 0.54	1.45	0.051	0.571	0.577	0.448	0.695	-0.2227 ± 0.1533 ± 0.0003	-0.2227 ± 0.1533 ± 0.0003
		0.54 – 2.00	1.51	0.048	0.633	0.577	0.786	0.618	0.1037 ± 0.0846 ± 0.0083	0.1037 ± 0.0846 ± 0.0083
0.072 – 0.098	0.20 – 0.28	0.00 – 0.23	2.10	0.084	0.484	0.239	0.140	0.792	0.1448 ± 0.1120 ± 0.0056	0.1448 ± 0.1120 ± 0.0056
		0.23 – 0.36	2.39	0.084	0.550	0.238	0.295	0.721	-0.0900 ± 0.1235 ± 0.0037	-0.0900 ± 0.1235 ± 0.0037
		0.36 – 0.54	2.47	0.084	0.572	0.239	0.441	0.692	0.0636 ± 0.1037 ± 0.0008	0.0636 ± 0.1037 ± 0.0008
		0.54 – 2.00	2.73	0.084	0.633	0.244	0.643	0.620	-0.1390 ± 0.1550 ± 0.0019	-0.1390 ± 0.1550 ± 0.0019
	0.28 – 0.37	0.00 – 0.23	1.89	0.084	0.434	0.321	0.142	0.834	0.0324 ± 0.1361 ± 0.0041	0.0324 ± 0.1361 ± 0.0041
		0.23 – 0.36	2.14	0.084	0.492	0.322	0.293	0.778	0.2041 ± 0.1542 ± 0.0025	0.2041 ± 0.1542 ± 0.0025
		0.36 – 0.54	2.30	0.084	0.530	0.321	0.444	0.736	-0.1377 ± 0.1309 ± 0.0019	-0.1377 ± 0.1309 ± 0.0019
		0.54 – 2.00	2.51	0.084	0.581	0.325	0.676	0.678	0.0458 ± 0.1355 ± 0.0017	0.0458 ± 0.1355 ± 0.0017
	0.37 – 0.49	0.00 – 0.23	1.83	0.085	0.420	0.423	0.146	0.846	0.1744 ± 0.1672 ± 0.0021	0.1744 ± 0.1672 ± 0.0021
		0.23 – 0.36	1.99	0.085	0.455	0.424	0.293	0.812	-0.1215 ± 0.1655 ± 0.0050	-0.1215 ± 0.1655 ± 0.0050
		0.36 – 0.54	2.18	0.084	0.502	0.425	0.443	0.766	-0.0580 ± 0.1638 ± 0.0039	-0.0580 ± 0.1638 ± 0.0039
		0.54 – 2.00	2.38	0.084	0.551	0.427	0.719	0.711	0.2399 ± 0.1409 ± 0.0055	0.2399 ± 0.1409 ± 0.0055
	0.49 – 0.70	0.00 – 0.23	1.78	0.085	0.407	0.578	0.148	0.857	-0.1433 ± 0.2075 ± 0.0017	-0.1433 ± 0.2075 ± 0.0017
		0.23 – 0.36	1.87	0.085	0.427	0.580	0.295	0.838	0.0972 ± 0.1945 ± 0.0018	0.0972 ± 0.1945 ± 0.0018
		0.36 – 0.54	2.02	0.084	0.463	0.583	0.443	0.806	-0.0715 ± 0.1714 ± 0.0004	-0.0715 ± 0.1714 ± 0.0004
		0.54 – 2.00	2.29	0.084	0.530	0.583	0.754	0.736	-0.0376 ± 0.1446 ± 0.0013	-0.0376 ± 0.1446 ± 0.0013
0.098 – 0.138	0.20 – 0.28	0.00 – 0.23	2.86	0.116	0.477	0.239	0.139	0.799	-0.0770 ± 0.1088 ± 0.0096	-0.0770 ± 0.1088 ± 0.0096
		0.23 – 0.36	3.18	0.116	0.532	0.239	0.292	0.742	0.2701 ± 0.1320 ± 0.0064	0.2701 ± 0.1320 ± 0.0064
		0.36 – 0.54	3.26	0.115	0.547	0.239	0.441	0.721	-0.1227 ± 0.1209 ± 0.0011	-0.1227 ± 0.1209 ± 0.0011
		0.54 – 2.00	3.53	0.115	0.593	0.244	0.638	0.670	-0.1502 ± 0.1941 ± 0.0114	-0.1502 ± 0.1941 ± 0.0114
	0.28 – 0.37	0.00 – 0.23	2.53	0.116	0.422	0.322	0.143	0.843	0.0116 ± 0.1298 ± 0.0073	0.0116 ± 0.1298 ± 0.0073
		0.23 – 0.36	2.81	0.116	0.469	0.323	0.291	0.799	-0.0949 ± 0.1427 ± 0.0076	-0.0949 ± 0.1427 ± 0.0076
		0.36 – 0.54	3.03	0.116	0.508	0.322	0.442	0.759	0.1217 ± 0.1436 ± 0.0019	0.1217 ± 0.1436 ± 0.0019
		0.54 – 2.00	3.21	0.115	0.539	0.325	0.672	0.725	0.3816 ± 0.1604 ± 0.0005	0.3816 ± 0.1604 ± 0.0005
	0.37 – 0.49	0.00 – 0.23	2.41	0.116	0.402	0.423	0.148	0.857	0.0416 ± 0.1617 ± 0.0033	0.0416 ± 0.1617 ± 0.0033
		0.23 – 0.36	2.51	0.116	0.418	0.426	0.293	0.841	-0.1487 ± 0.1538 ± 0.0032	-0.1487 ± 0.1538 ± 0.0032
		0.36 – 0.54	2.84	0.116	0.475	0.427	0.441	0.791	-0.1685 ± 0.1569 ± 0.0031	-0.1685 ± 0.1569 ± 0.0031
		0.54 – 2.00	3.11	0.116	0.521	0.427	0.716	0.741	0.1517 ± 0.1537 ± 0.0112	0.1517 ± 0.1537 ± 0.0112
	0.49 – 0.70	0.00 – 0.23	2.38	0.116	0.398	0.577	0.151	0.862	0.1951 ± 0.1944 ± 0.0031	0.1951 ± 0.1944 ± 0.0031
		0.23 – 0.36	2.40	0.116	0.400	0.579	0.296	0.858	0.0047 ± 0.1812 ± 0.0091	0.0047 ± 0.1812 ± 0.0091
		0.36 – 0.54	2.55	0.116	0.426	0.582	0.441	0.835	-0.1202 ± 0.1638 ± 0.0071	-0.1202 ± 0.1638 ± 0.0071
		0.54 – 2.00	2.98	0.115	0.500	0.584	0.742	0.765	0.3650 ± 0.1530 ± 0.0098	0.3650 ± 0.1530 ± 0.0098
0.138 – 0.600	0.20 – 0.28	0.00 – 0.23	4.95	0.205	0.467	0.239	0.141	0.811	0.0872 ± 0.0921 ± 0.0092	0.0872 ± 0.0921 ± 0.0092
		0.23 – 0.36	5.26	0.214	0.486	0.241	0.290	0.790	0.0373 ± 0.1131 ± 0.0019	0.0373 ± 0.1131 ± 0.0019
		0.36 – 0.54	5.21	0.207	0.497	0.240	0.440	0.776	-0.0034 ± 0.1340 ± 0.0081	-0.0034 ± 0.1340 ± 0.0081
		0.54 – 2.00	5.42	0.209	0.515	0.244	0.637	0.759	0.0877 ± 0.2405 ± 0.0083	0.0877 ± 0.2405 ± 0.0083
	0.28 – 0.37	0.00 – 0.23	4.48	0.201	0.428	0.321	0.147	0.841	-0.0329 ± 0.1101 ± 0.0063	-0.0329 ± 0.1101 ± 0.0063
		0.23 – 0.36	4.64	0.210	0.430	0.323	0.292	0.835	0.0392 ± 0.1219 ± 0.0096	0.0392 ± 0.1219 ± 0.0096
		0.36 – 0.54	4.89	0.211	0.457	0.324	0.439	0.810	-0.1622 ± 0.1313 ± 0.0057	-0.1622 ± 0.1313 ± 0.0057
		0.54 – 2.00	4.93	0.205	0.474	0.325	0.671	0.793	0.3967 ± 0.1818 ± 0.0163	0.3967 ± 0.1818 ± 0.0163
	0.37 – 0.49	0.00 – 0.23	4.38	0.201	0.419	0.422	0.150	0.847	-0.2299 ± 0.1331 ± 0.0067	-0.2299 ± 0.1331 ± 0.0067
		0.23 – 0.36	4.38	0.205	0.413	0.424	0.294	0.850	-0.0176 ± 0.1386 ± 0.0119	-0.0176 ± 0.1386 ± 0.0119
		0.36 – 0.54	4.65	0.210	0.432	0.427	0.438	0.832	0.0417 ± 0.1341 ± 0.0165	0.0417 ± 0.1341 ± 0.0165
		0.54 – 2.00	4.84	0.205	0.466	0.427	0.704	0.799	-0.0693 ± 0.1585 ± 0.0063	-0.0693 ± 0.1585 ± 0.0063
	0.49 – 0.70	0.00 – 0.23	4.33	0.200	0.414	0.575	0.153	0.852	-0.1260 ± 0.1653 ± 0.0138	-0.1260 ± 0.1653 ± 0.0138
		0.23 – 0.36	4.28	0.200	0.410	0.577	0.296	0.852	-0.0481 ± 0.1592 ± 0.0145	-0.0481 ± 0.1592 ± 0.0145
		0.36 – 0.54	4.41	0.206	0.413	0.580	0.444	0.848	-0.1015 ± 0.1450 ± 0.0154	-0.1015 ± 0.1450 ± 0.0154
		0.54 – 2.00	4.82	0.209	0.454	0.587	0.723	0.811	0.0794 ± 0.1383 ± 0.0167	0.0794 ± 0.1383 ± 0.0167

Table 117. Three-dimensionally binned SFA and CSA amplitudes of the $\cos(\phi + \phi_S)$ modulation for π^+ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin			Average kinematics						π^-	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(\phi+\phi_S)/\sqrt{2\epsilon(1-\epsilon)} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(\phi+\phi_S) \rangle_{\mathrm{L}\perp}$
0.023 – 0.072	0.20 – 0.28	0.00 – 0.23	1.46	0.052	0.561	0.236	0.152	0.709	-0.0354 ± 0.0986 ± 0.0001	-0.0354 ± 0.0986 ± 0.0001
		0.23 – 0.36	1.51	0.047	0.636	0.234	0.298	0.613	0.0101 ± 0.0789 ± 0.0004	0.0101 ± 0.0789 ± 0.0004
		0.36 – 0.54	1.53	0.045	0.674	0.236	0.443	0.561	0.0260 ± 0.0619 ± 0.0007	0.0260 ± 0.0619 ± 0.0007
		0.54 – 2.00	1.58	0.043	0.729	0.241	0.658	0.483	-0.1354 ± 0.0812 ± 0.0030	-0.1354 ± 0.0812 ± 0.0030
	0.28 – 0.37	0.00 – 0.23	1.43	0.054	0.527	0.320	0.150	0.748	-0.2275 ± 0.1307 ± 0.0042	-0.2275 ± 0.1307 ± 0.0042
		0.23 – 0.36	1.48	0.049	0.597	0.320	0.296	0.662	0.0716 ± 0.1515 ± 0.0071	0.0716 ± 0.1515 ± 0.0071
		0.36 – 0.54	1.50	0.047	0.643	0.319	0.449	0.603	0.0558 ± 0.0848 ± 0.0010	0.0558 ± 0.0848 ± 0.0010
		0.54 – 2.00	1.55	0.045	0.692	0.323	0.703	0.536	0.0022 ± 0.0757 ± 0.0015	0.0022 ± 0.0757 ± 0.0015
	0.37 – 0.49	0.00 – 0.23	1.40	0.055	0.505	0.422	0.152	0.774	0.0674 ± 0.1688 ± 0.0018	0.0674 ± 0.1688 ± 0.0018
		0.23 – 0.36	1.45	0.051	0.566	0.423	0.298	0.701	0.1177 ± 0.1784 ± 0.0060	0.1177 ± 0.1784 ± 0.0060
		0.36 – 0.54	1.49	0.048	0.615	0.423	0.448	0.640	0.0649 ± 0.1354 ± 0.0006	0.0649 ± 0.1354 ± 0.0006
		0.54 – 2.00	1.53	0.046	0.669	0.424	0.749	0.568	-0.0040 ± 0.0858 ± 0.0013	-0.0040 ± 0.0858 ± 0.0013
	0.49 – 0.70	0.00 – 0.23	1.37	0.056	0.487	0.579	0.151	0.794	-0.1808 ± 0.2031 ± 0.0055	-0.1808 ± 0.2031 ± 0.0055
		0.23 – 0.36	1.41	0.053	0.532	0.580	0.298	0.743	-0.0564 ± 0.1835 ± 0.0134	-0.0564 ± 0.1835 ± 0.0134
		0.36 – 0.54	1.44	0.050	0.575	0.578	0.446	0.691	-0.0058 ± 0.1828 ± 0.0014	-0.0058 ± 0.1828 ± 0.0014
		0.54 – 2.00	1.51	0.047	0.638	0.573	0.785	0.611	-0.0232 ± 0.1063 ± 0.0011	-0.0232 ± 0.1063 ± 0.0011
0.072 – 0.098	0.20 – 0.28	0.00 – 0.23	2.10	0.084	0.484	0.239	0.140	0.791	-0.1336 ± 0.1257 ± 0.0021	-0.1336 ± 0.1257 ± 0.0021
		0.23 – 0.36	2.37	0.084	0.547	0.237	0.294	0.724	-0.0026 ± 0.1417 ± 0.0061	-0.0026 ± 0.1417 ± 0.0061
		0.36 – 0.54	2.46	0.084	0.569	0.238	0.440	0.695	-0.0911 ± 0.1212 ± 0.0054	-0.0911 ± 0.1212 ± 0.0054
		0.54 – 2.00	2.72	0.083	0.632	0.244	0.644	0.622	0.1476 ± 0.1758 ± 0.0046	0.1476 ± 0.1758 ± 0.0046
	0.28 – 0.37	0.00 – 0.23	1.88	0.084	0.432	0.321	0.142	0.836	0.0207 ± 0.1582 ± 0.0151	0.0207 ± 0.1582 ± 0.0151
		0.23 – 0.36	2.13	0.084	0.490	0.322	0.292	0.779	-0.0728 ± 0.1805 ± 0.0070	-0.0728 ± 0.1805 ± 0.0070
		0.36 – 0.54	2.26	0.084	0.523	0.320	0.445	0.742	-0.0922 ± 0.1535 ± 0.0112	-0.0922 ± 0.1535 ± 0.0112
		0.54 – 2.00	2.48	0.084	0.575	0.324	0.678	0.685	-0.0193 ± 0.1548 ± 0.0028	-0.0193 ± 0.1548 ± 0.0028
	0.37 – 0.49	0.00 – 0.23	1.82	0.084	0.418	0.423	0.146	0.847	-0.3728 ± 0.2005 ± 0.0058	-0.3728 ± 0.2005 ± 0.0058
		0.23 – 0.36	1.95	0.084	0.448	0.424	0.292	0.819	-0.1638 ± 0.2011 ± 0.0070	-0.1638 ± 0.2011 ± 0.0070
		0.36 – 0.54	2.17	0.084	0.502	0.424	0.442	0.767	0.2570 ± 0.2019 ± 0.0050	0.2570 ± 0.2019 ± 0.0050
		0.54 – 2.00	2.37	0.084	0.546	0.425	0.724	0.715	-0.0498 ± 0.1677 ± 0.0040	-0.0498 ± 0.1677 ± 0.0040
	0.49 – 0.70	0.00 – 0.23	1.78	0.084	0.407	0.579	0.148	0.856	0.1333 ± 0.2456 ± 0.0122	0.1333 ± 0.2456 ± 0.0122
		0.23 – 0.36	1.85	0.084	0.425	0.581	0.295	0.840	0.1728 ± 0.2346 ± 0.0010	0.1728 ± 0.2346 ± 0.0010
		0.36 – 0.54	2.00	0.084	0.461	0.582	0.442	0.808	0.0366 ± 0.2098 ± 0.0038	0.0366 ± 0.2098 ± 0.0038
		0.54 – 2.00	2.26	0.084	0.524	0.580	0.751	0.743	-0.2213 ± 0.1966 ± 0.0011	-0.2213 ± 0.1966 ± 0.0011
0.098 – 0.138	0.20 – 0.28	0.00 – 0.23	2.86	0.116	0.477	0.239	0.138	0.799	0.0519 ± 0.1264 ± 0.0085	0.0519 ± 0.1264 ± 0.0085
		0.23 – 0.36	3.17	0.116	0.531	0.238	0.292	0.743	0.0631 ± 0.1558 ± 0.0091	0.0631 ± 0.1558 ± 0.0091
		0.36 – 0.54	3.25	0.115	0.545	0.239	0.442	0.724	0.0312 ± 0.1415 ± 0.0024	0.0312 ± 0.1415 ± 0.0024
		0.54 – 2.00	3.54	0.116	0.593	0.244	0.645	0.671	-0.2412 ± 0.2149 ± 0.0074	-0.2412 ± 0.2149 ± 0.0074
	0.28 – 0.37	0.00 – 0.23	2.52	0.116	0.420	0.321	0.144	0.844	0.3038 ± 0.1598 ± 0.0031	0.3038 ± 0.1598 ± 0.0031
		0.23 – 0.36	2.77	0.116	0.462	0.323	0.291	0.806	-0.0431 ± 0.1739 ± 0.0006	-0.0431 ± 0.1739 ± 0.0006
		0.36 – 0.54	2.98	0.116	0.500	0.322	0.444	0.766	0.1407 ± 0.1698 ± 0.0075	0.1407 ± 0.1698 ± 0.0075
		0.54 – 2.00	3.17	0.116	0.532	0.324	0.675	0.732	-0.2353 ± 0.1815 ± 0.0095	-0.2353 ± 0.1815 ± 0.0095
	0.37 – 0.49	0.00 – 0.23	2.39	0.116	0.399	0.422	0.148	0.860	0.4457 ± 0.1984 ± 0.0036	0.4457 ± 0.1984 ± 0.0036
		0.23 – 0.36	2.48	0.116	0.413	0.425	0.293	0.845	-0.3538 ± 0.1973 ± 0.0086	-0.3538 ± 0.1973 ± 0.0086
		0.36 – 0.54	2.80	0.116	0.467	0.426	0.441	0.797	-0.2607 ± 0.2000 ± 0.0036	-0.2607 ± 0.2000 ± 0.0036
		0.54 – 2.00	3.00	0.115	0.504	0.424	0.716	0.756	0.2305 ± 0.1889 ± 0.0033	0.2305 ± 0.1889 ± 0.0033
	0.49 – 0.70	0.00 – 0.23	2.37	0.116	0.396	0.579	0.150	0.863	-0.0288 ± 0.2385 ± 0.0036	-0.0288 ± 0.2385 ± 0.0036
		0.23 – 0.36	2.39	0.116	0.399	0.577	0.295	0.859	-0.0056 ± 0.2319 ± 0.0013	-0.0056 ± 0.2319 ± 0.0013
		0.36 – 0.54	2.55	0.116	0.426	0.583	0.441	0.834	0.0190 ± 0.2084 ± 0.0051	0.0190 ± 0.2084 ± 0.0051
		0.54 – 2.00	2.92	0.115	0.490	0.581	0.747	0.774	0.0386 ± 0.2012 ± 0.0037	0.0386 ± 0.2012 ± 0.0037
0.138 – 0.600	0.20 – 0.28	0.00 – 0.23	4.91	0.204	0.467	0.239	0.141	0.811	-0.0159 ± 0.1100 ± 0.0055	-0.0159 ± 0.1100 ± 0.0055
		0.23 – 0.36	5.22	0.212	0.486	0.240	0.290	0.790	0.0550 ± 0.1356 ± 0.0001	0.0550 ± 0.1356 ± 0.0001
		0.36 – 0.54	5.18	0.205	0.499	0.239	0.443	0.775	0.1027 ± 0.1594 ± 0.0019	0.1027 ± 0.1594 ± 0.0019
		0.54 – 2.00	5.40	0.211	0.509	0.243	0.645	0.767	-0.0169 ± 0.2839 ± 0.0180	-0.0169 ± 0.2839 ± 0.0180
	0.28 – 0.37	0.00 – 0.23	4.41	0.199	0.426	0.321	0.148	0.842	-0.0367 ± 0.1370 ± 0.0029	-0.0367 ± 0.1370 ± 0.0029
		0.23 – 0.36	4.55	0.208	0.426	0.322	0.291	0.839	0.2430 ± 0.1535 ± 0.0059	0.2430 ± 0.1535 ± 0.0059
		0.36 – 0.54	4.80	0.211	0.450	0.323	0.440	0.816	-0.0574 ± 0.1687 ± 0.0054	-0.0574 ± 0.1687 ± 0.0054
		0.54 – 2.00	4.79	0.204	0.464	0.324	0.679	0.802	0.1046 ± 0.2119 ± 0.0131	0.1046 ± 0.2119 ± 0.0131
	0.37 – 0.49	0.00 – 0.23	4.26	0.197	0.414	0.422	0.149	0.852	-0.3016 ± 0.1726 ± 0.0027	-0.3016 ± 0.1726 ± 0.0027
		0.23 – 0.36	4.31	0.203	0.410	0.424	0.294	0.852	0.0377 ± 0.1748 ± 0.0010	0.0377 ± 0.1748 ± 0.0010
		0.36 – 0.54	4.59	0.212	0.423	0.425	0.438	0.840	0.1760 ± 0.1825 ± 0.0097	0.1760 ± 0.1825 ± 0.0097
		0.54 – 2.00	4.78	0.208	0.453	0.426	0.712	0.809	-0.3010 ± 0.1999 ± 0.0094	-0.3010 ± 0.1999 ± 0.0094
	0.49 – 0.70	0.00 – 0.23	4.25	0.197	0.413	0.574	0.152	0.852	0.0133 ± 0.2148 ± 0.0055	0.0133 ± 0.2148 ± 0.0055
		0.23 – 0.36	4.13	0.198	0.400	0.574	0.295	0.861	-0.2317 ± 0.2128 ± 0.0051	-0.2317 ± 0.2128 ± 0.0051
		0.36 – 0.54	4.25	0.203	0.405	0.579	0.443	0.855	-0.0643 ± 0.1978 ± 0.0018	-0.0643 ± 0.1978 ± 0.0018
		0.54 – 2.00	4.67	0.210	0.437	0.581	0.726	0.825	0.1094 ± 0.1930 ± 0.0018	0.1094 ± 0.1930 ± 0.0018

Table 118. Three-dimensionally binned SFA and CSA amplitudes of the $\cos(\phi + \phi_S)$ modulation for π^- as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin			Average kinematics						K^+	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(\phi+\phi_S)/\sqrt{2\epsilon(1-\epsilon)} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(\phi+\phi_S) \rangle_{\mathrm{L}\perp}$
0.023 – 0.072	0.20 – 0.28	0.00 – 0.23	1.48	0.052	0.565	0.239	0.149	0.705	0.1667 ± 0.2571 ± 0.0103	0.1667 ± 0.2571 ± 0.0103
		0.23 – 0.36	1.54	0.048	0.638	0.237	0.297	0.612	-0.3053 ± 0.2134 ± 0.0120	-0.3053 ± 0.2134 ± 0.0120
		0.36 – 0.54	1.55	0.046	0.674	0.239	0.444	0.562	0.1006 ± 0.1665 ± 0.0069	0.1006 ± 0.1665 ± 0.0069
		0.54 – 2.00	1.59	0.043	0.734	0.242	0.670	0.476	-0.0181 ± 0.1928 ± 0.0187	-0.0181 ± 0.1928 ± 0.0187
	0.28 – 0.37	0.00 – 0.23	1.44	0.054	0.529	0.321	0.150	0.747	0.1266 ± 0.2946 ± 0.0174	0.1266 ± 0.2946 ± 0.0174
		0.23 – 0.36	1.51	0.050	0.603	0.322	0.298	0.657	0.7978 ± 0.3548 ± 0.0123	0.7978 ± 0.3548 ± 0.0123
		0.36 – 0.54	1.54	0.047	0.645	0.322	0.448	0.601	-0.1076 ± 0.1945 ± 0.0104	-0.1076 ± 0.1945 ± 0.0104
		0.54 – 2.00	1.56	0.044	0.701	0.326	0.722	0.523	0.2589 ± 0.1696 ± 0.0153	0.2589 ± 0.1696 ± 0.0153
	0.37 – 0.49	0.00 – 0.23	1.43	0.055	0.511	0.422	0.148	0.769	0.0668 ± 0.3322 ± 0.0132	0.0668 ± 0.3322 ± 0.0132
		0.23 – 0.36	1.47	0.052	0.557	0.424	0.297	0.713	-0.0954 ± 0.3683 ± 0.0058	-0.0954 ± 0.3683 ± 0.0058
		0.36 – 0.54	1.51	0.050	0.608	0.424	0.449	0.651	0.4340 ± 0.2883 ± 0.0057	0.4340 ± 0.2883 ± 0.0057
		0.54 – 2.00	1.56	0.046	0.671	0.428	0.763	0.565	0.4250 ± 0.1720 ± 0.0104	0.4250 ± 0.1720 ± 0.0104
	0.49 – 0.70	0.00 – 0.23	1.42	0.057	0.493	0.572	0.150	0.787	-0.5412 ± 0.4987 ± 0.0215	-0.5412 ± 0.4987 ± 0.0215
		0.23 – 0.36	1.44	0.054	0.534	0.573	0.298	0.740	-0.4678 ± 0.4009 ± 0.0202	-0.4678 ± 0.4009 ± 0.0202
		0.36 – 0.54	1.49	0.051	0.587	0.576	0.452	0.675	0.3816 ± 0.3636 ± 0.0103	0.3816 ± 0.3636 ± 0.0103
		0.54 – 2.00	1.53	0.048	0.637	0.580	0.805	0.612	0.2294 ± 0.1706 ± 0.0151	0.2294 ± 0.1706 ± 0.0151
0.072 – 0.098	0.20 – 0.28	0.00 – 0.23	2.21	0.084	0.508	0.241	0.142	0.770	-0.5388 ± 0.3354 ± 0.0100	-0.5388 ± 0.3354 ± 0.0100
		0.23 – 0.36	2.43	0.084	0.562	0.240	0.295	0.709	-0.6537 ± 0.3470 ± 0.0162	-0.6537 ± 0.3470 ± 0.0162
		0.36 – 0.54	2.50	0.084	0.578	0.241	0.440	0.683	-0.1638 ± 0.3494 ± 0.0015	-0.1638 ± 0.3494 ± 0.0015
		0.54 – 2.00	2.72	0.084	0.630	0.244	0.652	0.624	-0.8576 ± 0.4362 ± 0.0099	-0.8576 ± 0.4362 ± 0.0099
	0.28 – 0.37	0.00 – 0.23	1.98	0.084	0.455	0.323	0.142	0.816	-0.1824 ± 0.3246 ± 0.0020	-0.1824 ± 0.3246 ± 0.0020
		0.23 – 0.36	2.21	0.084	0.510	0.324	0.293	0.762	0.0606 ± 0.4029 ± 0.0236	0.0606 ± 0.4029 ± 0.0236
		0.36 – 0.54	2.38	0.084	0.550	0.324	0.446	0.714	0.1369 ± 0.3593 ± 0.0122	0.1369 ± 0.3593 ± 0.0122
		0.54 – 2.00	2.54	0.084	0.587	0.327	0.690	0.669	-0.4037 ± 0.3205 ± 0.0054	-0.4037 ± 0.3205 ± 0.0054
	0.37 – 0.49	0.00 – 0.23	1.88	0.085	0.429	0.423	0.145	0.839	0.1347 ± 0.3787 ± 0.0212	0.1347 ± 0.3787 ± 0.0212
		0.23 – 0.36	2.07	0.084	0.475	0.425	0.294	0.795	0.4726 ± 0.4122 ± 0.0048	0.4726 ± 0.4122 ± 0.0048
		0.36 – 0.54	2.23	0.084	0.512	0.427	0.445	0.758	-0.0087 ± 0.4041 ± 0.0002	-0.0087 ± 0.4041 ± 0.0002
		0.54 – 2.00	2.44	0.084	0.566	0.430	0.735	0.695	-0.3782 ± 0.3185 ± 0.0112	-0.3782 ± 0.3185 ± 0.0112
	0.49 – 0.70	0.00 – 0.23	1.88	0.085	0.427	0.577	0.150	0.842	0.9025 ± 0.4773 ± 0.0299	0.9025 ± 0.4773 ± 0.0299
		0.23 – 0.36	1.94	0.084	0.447	0.575	0.297	0.820	-1.4141 ± 0.4454 ± 0.0084	-1.4141 ± 0.4454 ± 0.0084
		0.36 – 0.54	2.06	0.085	0.470	0.583	0.446	0.798	0.0624 ± 0.3894 ± 0.0194	0.0624 ± 0.3894 ± 0.0194
		0.54 – 2.00	2.33	0.084	0.538	0.587	0.768	0.728	0.0984 ± 0.3037 ± 0.0092	0.0984 ± 0.3037 ± 0.0092
0.098 – 0.138	0.20 – 0.28	0.00 – 0.23	2.96	0.116	0.494	0.241	0.139	0.785	-0.3648 ± 0.3246 ± 0.0297	-0.3648 ± 0.3246 ± 0.0297
		0.23 – 0.36	3.31	0.116	0.554	0.239	0.290	0.718	0.0217 ± 0.4174 ± 0.0048	0.0217 ± 0.4174 ± 0.0048
		0.36 – 0.54	3.25	0.115	0.548	0.240	0.443	0.720	0.1928 ± 0.3694 ± 0.0021	0.1928 ± 0.3694 ± 0.0021
		0.54 – 2.00	3.53	0.115	0.596	0.245	0.650	0.664	0.0146 ± 0.5320 ± 0.0074	0.0146 ± 0.5320 ± 0.0074
	0.28 – 0.37	0.00 – 0.23	2.64	0.116	0.441	0.324	0.142	0.829	0.1636 ± 0.3235 ± 0.0035	0.1636 ± 0.3235 ± 0.0035
		0.23 – 0.36	2.91	0.116	0.485	0.326	0.292	0.787	-0.4456 ± 0.3830 ± 0.0347	-0.4456 ± 0.3830 ± 0.0347
		0.36 – 0.54	3.08	0.115	0.519	0.323	0.446	0.746	-0.4308 ± 0.3835 ± 0.0079	-0.4308 ± 0.3835 ± 0.0079
		0.54 – 2.00	3.20	0.116	0.535	0.327	0.682	0.726	-0.0965 ± 0.3883 ± 0.0002	-0.0965 ± 0.3883 ± 0.0002
	0.37 – 0.49	0.00 – 0.23	2.54	0.116	0.425	0.424	0.148	0.841	-0.0690 ± 0.3730 ± 0.0168	-0.0690 ± 0.3730 ± 0.0168
		0.23 – 0.36	2.66	0.116	0.441	0.427	0.291	0.824	-0.3113 ± 0.3694 ± 0.0067	-0.3113 ± 0.3694 ± 0.0067
		0.36 – 0.54	3.00	0.117	0.497	0.428	0.442	0.773	-0.0598 ± 0.3711 ± 0.0209	-0.0598 ± 0.3711 ± 0.0209
		0.54 – 2.00	3.21	0.115	0.539	0.428	0.716	0.723	0.0581 ± 0.3476 ± 0.0155	0.0581 ± 0.3476 ± 0.0155
	0.49 – 0.70	0.00 – 0.23	2.47	0.116	0.412	0.574	0.150	0.851	0.3257 ± 0.4415 ± 0.0074	0.3257 ± 0.4415 ± 0.0074
		0.23 – 0.36	2.50	0.116	0.418	0.577	0.296	0.845	-0.6677 ± 0.4348 ± 0.0037	-0.6677 ± 0.4348 ± 0.0037
		0.36 – 0.54	2.70	0.116	0.451	0.583	0.443	0.815	0.3818 ± 0.3543 ± 0.0065	0.3818 ± 0.3543 ± 0.0065
		0.54 – 2.00	3.06	0.115	0.514	0.588	0.752	0.752	-0.3697 ± 0.3270 ± 0.0013	-0.3697 ± 0.3270 ± 0.0013
0.138 – 0.600	0.20 – 0.28	0.00 – 0.23	5.15	0.207	0.485	0.242	0.138	0.795	0.0365 ± 0.2873 ± 0.0155	0.0365 ± 0.2873 ± 0.0155
		0.23 – 0.36	5.33	0.208	0.505	0.243	0.292	0.773	-0.0412 ± 0.3856 ± 0.0393	-0.0412 ± 0.3856 ± 0.0393
		0.36 – 0.54	5.06	0.196	0.508	0.241	0.445	0.765	-0.3313 ± 0.4155 ± 0.0345	-0.3313 ± 0.4155 ± 0.0345
		0.54 – 2.00	5.22	0.211	0.493	0.246	0.645	0.779	0.0096 ± 0.7635 ± 0.0494	0.0096 ± 0.7635 ± 0.0494
	0.28 – 0.37	0.00 – 0.23	4.76	0.204	0.449	0.323	0.142	0.825	-0.2726 ± 0.2545 ± 0.0260	-0.2726 ± 0.2545 ± 0.0260
		0.23 – 0.36	5.01	0.211	0.462	0.325	0.289	0.810	-0.7404 ± 0.3022 ± 0.0356	-0.7404 ± 0.3022 ± 0.0356
		0.36 – 0.54	5.04	0.203	0.488	0.325	0.443	0.783	0.1921 ± 0.3303 ± 0.0164	0.1921 ± 0.3303 ± 0.0164
		0.54 – 2.00	4.69	0.198	0.464	0.327	0.681	0.798	0.8302 ± 0.4253 ± 0.0162	0.8302 ± 0.4253 ± 0.0162
	0.37 – 0.49	0.00 – 0.23	4.63	0.204	0.435	0.424	0.150	0.836	0.0669 ± 0.2847 ± 0.0186	0.0669 ± 0.2847 ± 0.0186
		0.23 – 0.36	4.62	0.204	0.437	0.425	0.292	0.831	0.1134 ± 0.2966 ± 0.0147	0.1134 ± 0.2966 ± 0.0147
		0.36 – 0.54	4.91	0.210	0.458	0.426	0.439	0.812	0.0695 ± 0.3002 ± 0.0221	0.0695 ± 0.3002 ± 0.0221
		0.54 – 2.00	5.02	0.204	0.483	0.428	0.707	0.784	-0.3337 ± 0.3526 ± 0.0111	-0.3337 ± 0.3526 ± 0.0111
	0.49 – 0.70	0.00 – 0.23	4.55	0.204	0.426	0.576	0.149	0.843	0.5052 ± 0.3570 ± 0.0082	0.5052 ± 0.3570 ± 0.0082
		0.23 – 0.36	4.52	0.206	0.422	0.577	0.296	0.844	-0.0341 ± 0.3391 ± 0.0135	-0.0341 ± 0.3391 ± 0.0135
		0.36 – 0.54	4.63	0.207	0.435	0.583	0.443	0.831	-0.1143 ± 0.2918 ± 0.0094	-0.1143 ± 0.2918 ± 0.0094
		0.54 – 2.00	5.06	0.210	0.473	0.589	0.731	0.796	0.2918 ± 0.2956 ± 0.0120	0.2918 ± 0.2956 ± 0.0120

Table 119. Three-dimensionally binned SFA and CSA amplitudes of the $\cos(\phi+\phi_S)$ modulation for K^+ as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin			Average kinematics						K^-	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(\phi+\phi_S)/\sqrt{2\epsilon(1-\epsilon)} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(\phi+\phi_S) \rangle_{\mathrm{L}\perp}$
0.023 – 0.072	0.20 – 0.28	0.00 – 0.23	1.48	0.051	0.575	0.236	0.152	0.692	-0.2186 ± 0.3376 ± 0.0100	-0.2186 ± 0.3376 ± 0.0100
		0.23 – 0.36	1.51	0.047	0.646	0.236	0.298	0.601	0.3777 ± 0.2806 ± 0.0042	0.3777 ± 0.2806 ± 0.0042
		0.36 – 0.54	1.54	0.045	0.684	0.237	0.444	0.547	0.0460 ± 0.2121 ± 0.0055	0.0460 ± 0.2121 ± 0.0055
		0.54 – 2.00	1.61	0.043	0.744	0.242	0.666	0.461	-0.1274 ± 0.2440 ± 0.0006	-0.1274 ± 0.2440 ± 0.0006
	0.28 – 0.37	0.00 – 0.23	1.45	0.053	0.537	0.319	0.151	0.738	0.2936 ± 0.4011 ± 0.0006	0.2936 ± 0.4011 ± 0.0006
		0.23 – 0.36	1.50	0.049	0.608	0.320	0.296	0.650	0.0197 ± 0.4851 ± 0.0210	0.0197 ± 0.4851 ± 0.0210
		0.36 – 0.54	1.51	0.047	0.644	0.319	0.449	0.602	-0.1824 ± 0.2770 ± 0.0076	-0.1824 ± 0.2770 ± 0.0076
		0.54 – 2.00	1.56	0.044	0.701	0.324	0.724	0.523	-0.0322 ± 0.2273 ± 0.0058	-0.0322 ± 0.2273 ± 0.0058
	0.37 – 0.49	0.00 – 0.23	1.40	0.054	0.513	0.424	0.146	0.768	1.0680 ± 0.5071 ± 0.0260	1.0680 ± 0.5071 ± 0.0260
		0.23 – 0.36	1.48	0.051	0.579	0.422	0.298	0.689	0.5372 ± 0.5775 ± 0.0280	0.5372 ± 0.5775 ± 0.0280
		0.36 – 0.54	1.53	0.049	0.622	0.423	0.448	0.633	0.3321 ± 0.4189 ± 0.0104	0.3321 ± 0.4189 ± 0.0104
		0.54 – 2.00	1.54	0.045	0.674	0.425	0.770	0.562	0.2753 ± 0.2545 ± 0.0039	0.2753 ± 0.2545 ± 0.0039
	0.49 – 0.70	0.00 – 0.23	1.41	0.055	0.508	0.562	0.151	0.771	-0.4122 ± 0.6384 ± 0.0034	-0.4122 ± 0.6384 ± 0.0034
		0.23 – 0.36	1.44	0.052	0.550	0.566	0.298	0.721	0.2571 ± 0.5867 ± 0.0023	0.2571 ± 0.5867 ± 0.0023
		0.36 – 0.54	1.49	0.050	0.595	0.572	0.446	0.664	0.0789 ± 0.6005 ± 0.0138	0.0789 ± 0.6005 ± 0.0138
		0.54 – 2.00	1.53	0.046	0.662	0.569	0.799	0.578	0.5792 ± 0.3022 ± 0.0078	0.5792 ± 0.3022 ± 0.0078
0.072 – 0.098	0.20 – 0.28	0.00 – 0.23	2.18	0.084	0.503	0.239	0.139	0.775	-0.0340 ± 0.4584 ± 0.0161	-0.0340 ± 0.4584 ± 0.0161
		0.23 – 0.36	2.46	0.084	0.568	0.237	0.294	0.701	-0.2656 ± 0.5171 ± 0.0150	-0.2656 ± 0.5171 ± 0.0150
		0.36 – 0.54	2.54	0.084	0.586	0.237	0.440	0.677	0.1635 ± 0.4498 ± 0.0038	0.1635 ± 0.4498 ± 0.0038
		0.54 – 2.00	2.75	0.084	0.637	0.242	0.648	0.614	-0.2591 ± 0.5985 ± 0.0047	-0.2591 ± 0.5985 ± 0.0047
	0.28 – 0.37	0.00 – 0.23	1.95	0.084	0.448	0.323	0.138	0.824	0.3078 ± 0.4767 ± 0.0336	0.3078 ± 0.4767 ± 0.0336
		0.23 – 0.36	2.24	0.084	0.518	0.322	0.292	0.752	0.6580 ± 0.6498 ± 0.0290	0.6580 ± 0.6498 ± 0.0290
		0.36 – 0.54	2.40	0.084	0.555	0.321	0.444	0.712	0.2766 ± 0.5282 ± 0.0101	0.2766 ± 0.5282 ± 0.0101
		0.54 – 2.00	2.48	0.084	0.573	0.324	0.693	0.689	0.0059 ± 0.4664 ± 0.0085	0.0059 ± 0.4664 ± 0.0085
	0.37 – 0.49	0.00 – 0.23	1.84	0.084	0.426	0.424	0.143	0.842	0.6939 ± 0.6588 ± 0.0384	0.6939 ± 0.6588 ± 0.0384
		0.23 – 0.36	2.06	0.084	0.475	0.424	0.294	0.794	0.5018 ± 0.6213 ± 0.0235	0.5018 ± 0.6213 ± 0.0235
		0.36 – 0.54	2.27	0.083	0.528	0.424	0.443	0.743	0.2550 ± 0.6447 ± 0.0406	0.2550 ± 0.6447 ± 0.0406
		0.54 – 2.00	2.45	0.084	0.566	0.423	0.727	0.695	0.4657 ± 0.5248 ± 0.0322	0.4657 ± 0.5248 ± 0.0322
	0.49 – 0.70	0.00 – 0.23	1.89	0.085	0.431	0.567	0.150	0.837	1.6805 ± 0.8556 ± 0.0433	1.6805 ± 0.8556 ± 0.0433
		0.23 – 0.36	2.00	0.085	0.455	0.570	0.295	0.811	-0.7808 ± 0.7555 ± 0.0314	-0.7808 ± 0.7555 ± 0.0314
		0.36 – 0.54	2.16	0.084	0.495	0.577	0.440	0.775	0.6449 ± 0.6878 ± 0.0510	0.6449 ± 0.6878 ± 0.0510
		0.54 – 2.00	2.42	0.084	0.556	0.570	0.772	0.707	-0.1603 ± 0.5911 ± 0.0403	-0.1603 ± 0.5911 ± 0.0403
0.098 – 0.138	0.20 – 0.28	0.00 – 0.23	3.02	0.116	0.505	0.240	0.138	0.774	0.0590 ± 0.4420 ± 0.0158	0.0590 ± 0.4420 ± 0.0158
		0.23 – 0.36	3.26	0.115	0.549	0.241	0.290	0.727	-0.0977 ± 0.5551 ± 0.0043	-0.0977 ± 0.5551 ± 0.0043
		0.36 – 0.54	3.30	0.115	0.556	0.238	0.444	0.713	-0.6578 ± 0.5072 ± 0.0261	-0.6578 ± 0.5072 ± 0.0261
		0.54 – 2.00	3.61	0.115	0.607	0.243	0.649	0.655	0.0240 ± 0.7273 ± 0.0072	0.0240 ± 0.7273 ± 0.0072
	0.28 – 0.37	0.00 – 0.23	2.69	0.116	0.450	0.323	0.142	0.819	0.5524 ± 0.5176 ± 0.0609	0.5524 ± 0.5176 ± 0.0609
		0.23 – 0.36	2.98	0.116	0.501	0.322	0.294	0.769	0.1258 ± 0.5679 ± 0.0300	0.1258 ± 0.5679 ± 0.0300
		0.36 – 0.54	3.06	0.115	0.516	0.324	0.450	0.750	0.2164 ± 0.5794 ± 0.0353	0.2164 ± 0.5794 ± 0.0353
		0.54 – 2.00	3.34	0.116	0.559	0.324	0.694	0.703	-0.5380 ± 0.5757 ± 0.0254	-0.5380 ± 0.5757 ± 0.0254
	0.37 – 0.49	0.00 – 0.23	2.42	0.115	0.408	0.423	0.149	0.854	-0.1506 ± 0.6108 ± 0.0745	-0.1506 ± 0.6108 ± 0.0745
		0.23 – 0.36	2.69	0.117	0.447	0.427	0.293	0.819	-0.9193 ± 0.6011 ± 0.0368	-0.9193 ± 0.6011 ± 0.0368
		0.36 – 0.54	2.94	0.116	0.491	0.428	0.442	0.778	0.8947 ± 0.6471 ± 0.0110	0.8947 ± 0.6471 ± 0.0110
		0.54 – 2.00	3.19	0.114	0.540	0.424	0.741	0.723	0.2703 ± 0.6042 ± 0.0114	0.2703 ± 0.6042 ± 0.0114
	0.49 – 0.70	0.00 – 0.23	2.43	0.115	0.407	0.563	0.149	0.854	0.5638 ± 0.8311 ± 0.0707	0.5638 ± 0.8311 ± 0.0707
		0.23 – 0.36	2.47	0.115	0.416	0.572	0.295	0.848	-0.9033 ± 0.7941 ± 0.0445	-0.9033 ± 0.7941 ± 0.0445
		0.36 – 0.54	2.72	0.116	0.453	0.577	0.435	0.813	0.0483 ± 0.7248 ± 0.0446	0.0483 ± 0.7248 ± 0.0446
		0.54 – 2.00	3.08	0.115	0.517	0.574	0.764	0.750	-0.5558 ± 0.6077 ± 0.0391	-0.5558 ± 0.6077 ± 0.0391
0.138 – 0.600	0.20 – 0.28	0.00 – 0.23	4.98	0.201	0.481	0.241	0.144	0.800	0.2658 ± 0.3972 ± 0.0361	0.2658 ± 0.3972 ± 0.0361
		0.23 – 0.36	5.30	0.206	0.507	0.241	0.290	0.770	-0.3822 ± 0.5291 ± 0.0006	-0.3822 ± 0.5291 ± 0.0006
		0.36 – 0.54	5.32	0.204	0.518	0.239	0.449	0.757	-0.2353 ± 0.5824 ± 0.0074	-0.2353 ± 0.5824 ± 0.0074
		0.54 – 2.00	5.44	0.205	0.527	0.245	0.663	0.747	-0.0482 ± 1.0833 ± 0.0010	-0.0482 ± 1.0833 ± 0.0010
	0.28 – 0.37	0.00 – 0.23	4.71	0.203	0.451	0.322	0.146	0.822	0.0813 ± 0.4545 ± 0.0652	0.0813 ± 0.4545 ± 0.0652
		0.23 – 0.36	4.92	0.209	0.462	0.325	0.291	0.809	-0.6205 ± 0.5006 ± 0.0622	-0.6205 ± 0.5006 ± 0.0622
		0.36 – 0.54	4.90	0.205	0.473	0.325	0.441	0.795	1.0363 ± 0.5713 ± 0.0090	1.0363 ± 0.5713 ± 0.0090
		0.54 – 2.00	5.07	0.200	0.503	0.324	0.691	0.765	-0.2716 ± 0.6418 ± 0.0175	-0.2716 ± 0.6418 ± 0.0175
	0.37 – 0.49	0.00 – 0.23	4.35	0.195	0.430	0.420	0.149	0.839	-0.7446 ± 0.5687 ± 0.1018	-0.7446 ± 0.5687 ± 0.1018
		0.23 – 0.36	4.49	0.205	0.422	0.423	0.293	0.843	-0.5071 ± 0.5833 ± 0.0860	-0.5071 ± 0.5833 ± 0.0860
		0.36 – 0.54	4.75	0.207	0.450	0.426	0.437	0.817	-0.4339 ± 0.5498 ± 0.0564	-0.4339 ± 0.5498 ± 0.0564
		0.54 – 2.00	4.87	0.203	0.474	0.425	0.728	0.792	-0.1774 ± 0.5963 ± 0.0007	-0.1774 ± 0.5963 ± 0.0007
	0.49 – 0.70	0.00 – 0.23	4.39	0.196	0.432	0.562	0.154	0.839	-0.8918 ± 0.7034 ± 0.0746	-0.8918 ± 0.7034 ± 0.0746
		0.23 – 0.36	4.35	0.201	0.419	0.571	0.294	0.846	-1.3647 ± 0.9991 ± 0.1030	-1.3647 ± 0.9991 ± 0.1030
		0.36 – 0.54	4.56	0.207	0.429	0.577	0.440	0.838	-0.2730 ± 0.6369 ± 0.0972	-0.2730 ± 0.6369 ± 0.0972
		0.54 – 2.00	4.85	0.204	0.470	0.579	0.735	0.796	-0.9361 ± 0.5789 ± 0.0708	-0.9361 ± 0.5789 ± 0.0708

Table 120. Three-dimensionally binned SFA and CSA amplitudes of the $\cos(\phi + \phi_S)$ modulation for K^- as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.

Kinematic bin			Average kinematics						p	
x	z	$P_{h\perp}$ [GeV]	$\langle Q^2 \rangle$ [GeV^2]	$\langle x \rangle$	$\langle y \rangle$	$\langle z \rangle$	$\langle P_{h\perp} \rangle$ [GeV]	$\langle \epsilon \rangle$	$2\langle \cos(\phi+\phi_S)/\sqrt{2\epsilon(1-\epsilon)} \rangle_{\mathrm{L}\perp}$	$2\langle \cos(\phi+\phi_S) \rangle_{\mathrm{L}\perp}$
0.023 – 0.073	0.20 – 0.34	0.00 – 0.24	1.60	0.048	0.656	0.281	0.167	0.598	-0.0962 ± 0.3433 ± 0.0277	-0.0962 ± 0.3433 ± 0.0277
		0.24 – 0.40	1.61	0.045	0.698	0.274	0.327	0.535	-0.4962 ± 0.2022 ± 0.0239	-0.4962 ± 0.2022 ± 0.0239
		0.40 – 0.57	1.60	0.044	0.713	0.271	0.483	0.512	-0.0484 ± 0.1661 ± 0.0192	-0.0484 ± 0.1661 ± 0.0192
		0.57 – 2.00	1.60	0.043	0.734	0.276	0.728	0.480	-0.3584 ± 0.1461 ± 0.0289	-0.3584 ± 0.1461 ± 0.0289
	0.34 – 0.43	0.00 – 0.24	1.48	0.053	0.544	0.384	0.157	0.736	0.1512 ± 0.3396 ± 0.0147	0.1512 ± 0.3396 ± 0.0147
		0.24 – 0.40	1.51	0.050	0.603	0.384	0.322	0.659	0.3588 ± 0.3650 ± 0.0540	0.3588 ± 0.3650 ± 0.0540
		0.40 – 0.57	1.54	0.049	0.632	0.383	0.483	0.620	-0.0926 ± 0.2654 ± 0.0228	-0.0926 ± 0.2654 ± 0.0228
		0.57 – 2.00	1.54	0.046	0.669	0.384	0.766	0.568	0.0573 ± 0.1963 ± 0.0307	0.0573 ± 0.1963 ± 0.0307
	0.43 – 0.52	0.00 – 0.24	1.43	0.056	0.503	0.473	0.159	0.777	0.3890 ± 0.4375 ± 0.0253	0.3890 ± 0.4375 ± 0.0253
		0.24 – 0.40	1.47	0.052	0.567	0.471	0.322	0.699	0.6980 ± 0.4117 ± 0.0437	0.6980 ± 0.4117 ± 0.0437
		0.40 – 0.57	1.50	0.050	0.597	0.472	0.481	0.663	0.3626 ± 0.4263 ± 0.0859	0.3626 ± 0.4263 ± 0.0859
		0.57 – 2.00	1.52	0.047	0.641	0.471	0.796	0.604	-0.1128 ± 0.2559 ± 0.0234	-0.1128 ± 0.2559 ± 0.0234
	0.52 – 0.70	0.00 – 0.24	1.40	0.057	0.487	0.588	0.153	0.795	0.4363 ± 0.4972 ± 0.0074	0.4363 ± 0.4972 ± 0.0074
		0.24 – 0.40	1.45	0.055	0.527	0.587	0.321	0.747	-0.7774 ± 0.4128 ± 0.0433	-0.7774 ± 0.4128 ± 0.0433
		0.40 – 0.57	1.46	0.052	0.561	0.589	0.482	0.707	-0.2726 ± 0.4727 ± 0.0200	-0.2726 ± 0.4727 ± 0.0200
		0.57 – 2.00	1.50	0.049	0.607	0.591	0.808	0.649	0.1851 ± 0.2561 ± 0.0463	0.1851 ± 0.2561 ± 0.0463
0.073 – 0.107	0.20 – 0.34	0.00 – 0.24	2.83	0.089	0.617	0.293	0.158	0.653	-0.6900 ± 0.4032 ± 0.0314	-0.6900 ± 0.4032 ± 0.0314
		0.24 – 0.40	2.91	0.088	0.638	0.285	0.321	0.624	-0.2748 ± 0.4620 ± 0.0219	-0.2748 ± 0.4620 ± 0.0219
		0.40 – 0.57	3.01	0.088	0.661	0.279	0.481	0.592	-0.0583 ± 0.3131 ± 0.0089	-0.0583 ± 0.3131 ± 0.0089
		0.57 – 2.00	3.03	0.088	0.666	0.282	0.718	0.584	-0.2953 ± 0.3149 ± 0.0292	-0.2953 ± 0.3149 ± 0.0292
	0.34 – 0.43	0.00 – 0.24	2.34	0.089	0.509	0.385	0.148	0.775	0.1029 ± 0.4002 ± 0.0200	0.1029 ± 0.4002 ± 0.0200
		0.24 – 0.40	2.49	0.088	0.545	0.385	0.317	0.732	0.3700 ± 0.3943 ± 0.0313	0.3700 ± 0.3943 ± 0.0313
		0.40 – 0.57	2.53	0.088	0.558	0.385	0.480	0.717	0.7453 ± 0.3993 ± 0.0313	0.7453 ± 0.3993 ± 0.0313
		0.57 – 2.00	2.63	0.088	0.575	0.385	0.744	0.694	0.5790 ± 0.3416 ± 0.0334	0.5790 ± 0.3416 ± 0.0334
	0.43 – 0.52	0.00 – 0.24	2.10	0.089	0.458	0.473	0.155	0.817	0.0920 ± 0.4443 ± 0.0084	0.0920 ± 0.4443 ± 0.0084
		0.24 – 0.40	2.22	0.088	0.485	0.473	0.319	0.789	0.5274 ± 0.4026 ± 0.0187	0.5274 ± 0.4026 ± 0.0187
		0.40 – 0.57	2.34	0.088	0.515	0.474	0.477	0.759	-0.0870 ± 0.4693 ± 0.0043	-0.0870 ± 0.4693 ± 0.0043
		0.57 – 2.00	2.45	0.088	0.538	0.472	0.773	0.731	-0.3819 ± 0.4175 ± 0.0377	-0.3819 ± 0.4175 ± 0.0377
	0.52 – 0.70	0.00 – 0.24	1.89	0.089	0.410	0.592	0.156	0.856	0.0542 ± 0.4879 ± 0.0252	0.0542 ± 0.4879 ± 0.0252
		0.24 – 0.40	1.95	0.089	0.427	0.593	0.320	0.839	0.7164 ± 0.4113 ± 0.0086	0.7164 ± 0.4113 ± 0.0086
		0.40 – 0.57	2.05	0.088	0.450	0.594	0.481	0.817	0.7641 ± 0.4660 ± 0.0105	0.7641 ± 0.4660 ± 0.0105
		0.57 – 2.00	2.24	0.088	0.494	0.598	0.781	0.772	-0.1284 ± 0.3916 ± 0.0582	-0.1284 ± 0.3916 ± 0.0582
0.107 – 0.157	0.20 – 0.34	0.00 – 0.24	3.97	0.128	0.600	0.295	0.156	0.677	-0.3196 ± 0.3915 ± 0.0071	-0.3196 ± 0.3915 ± 0.0071
		0.24 – 0.40	4.13	0.129	0.622	0.288	0.321	0.648	0.1306 ± 0.4499 ± 0.0223	0.1306 ± 0.4499 ± 0.0223
		0.40 – 0.57	4.27	0.128	0.644	0.283	0.481	0.617	0.2803 ± 0.4043 ± 0.0029	0.2803 ± 0.4043 ± 0.0029
		0.57 – 2.00	4.24	0.127	0.646	0.288	0.719	0.613	-0.3521 ± 0.3899 ± 0.0303	-0.3521 ± 0.3899 ± 0.0303
	0.34 – 0.43	0.00 – 0.24	3.38	0.130	0.504	0.387	0.152	0.780	-0.1110 ± 0.3797 ± 0.0259	-0.1110 ± 0.3797 ± 0.0259
		0.24 – 0.40	3.48	0.129	0.523	0.388	0.316	0.759	0.0866 ± 0.3494 ± 0.0027	0.0866 ± 0.3494 ± 0.0027
		0.40 – 0.57	3.69	0.128	0.555	0.386	0.477	0.722	0.4180 ± 0.4545 ± 0.0410	0.4180 ± 0.4545 ± 0.0410
		0.57 – 2.00	3.71	0.127	0.563	0.385	0.754	0.712	-0.1868 ± 0.4445 ± 0.0546	-0.1868 ± 0.4445 ± 0.0546
	0.43 – 0.52	0.00 – 0.24	3.06	0.129	0.457	0.474	0.156	0.820	0.2974 ± 0.4374 ± 0.0049	0.2974 ± 0.4374 ± 0.0049
		0.24 – 0.40	3.14	0.130	0.469	0.475	0.317	0.807	-0.0072 ± 0.4001 ± 0.0078	-0.0072 ± 0.4001 ± 0.0078
		0.40 – 0.57	3.29	0.129	0.492	0.472	0.478	0.784	-0.5506 ± 0.4511 ± 0.0036	-0.5506 ± 0.4511 ± 0.0036
		0.57 – 2.00	3.45	0.128	0.524	0.473	0.771	0.747	0.3725 ± 0.5091 ± 0.0096	0.3725 ± 0.5091 ± 0.0096
	0.52 – 0.70	0.00 – 0.24	2.75	0.129	0.413	0.594	0.154	0.852	0.5304 ± 0.5060 ± 0.0251	0.5304 ± 0.5060 ± 0.0251
		0.24 – 0.40	2.77	0.129	0.415	0.594	0.320	0.848	0.2637 ± 0.4198 ± 0.0380	0.2637 ± 0.4198 ± 0.0380
		0.40 – 0.57	2.85	0.130	0.425	0.602	0.479	0.840	-0.1483 ± 0.4805 ± 0.0291	-0.1483 ± 0.4805 ± 0.0291
		0.57 – 2.00	3.17	0.129	0.476	0.602	0.769	0.788	0.2312 ± 0.4515 ± 0.0462	0.2312 ± 0.4515 ± 0.0462
0.157 – 0.600	0.20 – 0.34	0.00 – 0.24	6.65	0.229	0.566	0.301	0.155	0.717	-0.3068 ± 0.3941 ± 0.0113	-0.3068 ± 0.3941 ± 0.0113
		0.24 – 0.40	6.49	0.219	0.579	0.298	0.317	0.703	-0.2642 ± 0.4021 ± 0.0219	-0.2642 ± 0.4021 ± 0.0219
		0.40 – 0.57	6.54	0.211	0.608	0.290	0.476	0.664	0.5027 ± 0.4800 ± 0.0008	0.5027 ± 0.4800 ± 0.0008
		0.57 – 2.00	6.59	0.216	0.597	0.292	0.719	0.678	-0.0457 ± 0.6481 ± 0.0519	-0.0457 ± 0.6481 ± 0.0519
	0.34 – 0.43	0.00 – 0.24	5.84	0.231	0.492	0.386	0.154	0.793	0.3342 ± 0.3446 ± 0.0152	0.3342 ± 0.3446 ± 0.0152
		0.24 – 0.40	5.96	0.233	0.499	0.387	0.315	0.786	0.0440 ± 0.3389 ± 0.0047	0.0440 ± 0.3389 ± 0.0047
		0.40 – 0.57	5.97	0.230	0.509	0.389	0.473	0.774	-0.1560 ± 0.4260 ± 0.0355	-0.1560 ± 0.4260 ± 0.0355
		0.57 – 2.00	6.10	0.235	0.511	0.386	0.764	0.771	-0.3461 ± 0.5282 ± 0.0225	-0.3461 ± 0.5282 ± 0.0225
	0.43 – 0.52	0.00 – 0.24	5.22	0.228	0.444	0.474	0.153	0.833	-0.0067 ± 0.3901 ± 0.0129	-0.0067 ± 0.3901 ± 0.0129
		0.24 – 0.40	5.38	0.234	0.450	0.473	0.316	0.826	0.0772 ± 0.3903 ± 0.0083	0.0772 ± 0.3903 ± 0.0083
		0.40 – 0.57	5.47	0.234	0.458	0.476	0.476	0.818	-0.2188 ± 0.4445 ± 0.0131	-0.2188 ± 0.4445 ± 0.0131
		0.57 – 2.00	5.60	0.237	0.467	0.476	0.756	0.805	-0.1329 ± 0.5103 ± 0.0010	-0.1329 ± 0.5103 ± 0.0010
	0.52 – 0.70	0.00 – 0.24	4.95	0.223	0.426	0.593	0.156	0.844	-0.2919 ± 0.4437 ± 0.0559	-0.2919 ± 0.4437 ± 0.0559
		0.24 – 0.40	4.89	0.229	0.411	0.594	0.319	0.855	-0.0152 ± 0.3994 ± 0.0440	-0.0152 ± 0.3994 ± 0.0440
		0.40 – 0.57	4.88	0.231	0.411	0.599	0.479	0.853	-0.2154 ± 0.4558 ± 0.0216	-0.2154 ± 0.4558 ± 0.0216
		0.57 – 2.00	5.07	0.233	0.427	0.604	0.749	0.837	0.1424 ± 0.4555 ± 0.0261	0.1424 ± 0.4555 ± 0.0261

Table 121. Three-dimensionally binned SFA and CSA amplitudes of the $\cos(\phi+\phi_S)$ modulation for p as a function of x, z, and $P_{h\perp}$, at the average kinematics for the various bins as indicated. For the quoted uncertainties, the first is statistical, while the second is systematic, not including the overall scale uncertainty of 8.0%.