

Collisions Lab - Physics 250

Lab Partners: Alexandra Ding, Mark Davis, Carol Sanders, Benjamin Wen

raw data: (Type I)

include bars→

m_A [kg]	1.4863
m_B [kg]	0.4962
L [m]	0.076

\$ references
for these values

raw data: (Type II)

include bars→

m_A [kg]	1.487
m_B [kg]	0.497
L [m]	0.076

\$ references
for these values

program rest of eqns
as if $v_{Af} \neq v_{Bf}$ (true in type

Collision	trial #	(raw) t_1	v_{Ai}	(raw) t_2	v_{Bf}	(raw) t_3	v_{Af}	$p_{sys i}$	$p_{sys f}$
Type I	1	0.149	0.51007	0.211	0.3602	n/a	just set	0.75847	0.7146
	2	0.125	0.608	0.172	0.4419	n/a	equal	0.9041	0.8767
	3	0.145	0.52414	0.203	0.3744	n/a	to v_{Bf}	0.77939	0.7428
	4	0.129	0.58915	0.177	0.4294	n/a	(at left)	0.87606	0.8519
	5	0.127	0.59843	0.175	0.4343	n/a		0.88986	0.8616
Type II	1	0.1	0.76	0.077	0.987	0.202	0.37624	1.13012	1.0497
	2	0.152	0.5	0.121	0.6281	0.279	0.2724	0.7435	0.717
	3	0.095	0.8	0.073	1.0411	0.196	0.38776	1.1896	1.0937
	4	0.11	0.69091	0.085	0.8941	0.199	0.38191	1.02738	1.012
	5	0.139	0.54676	0.108	0.7037	0.257	0.29572	0.81304	0.7893

AVERAGES:

Collision	% Δp	% ΔK
Type I	-3.88957	-30.76
Type II	-4.62972	-17.09

Running avg. Needs one trial minimum.

pay attn
to the di
 v_{Af}

II) what we're ultimately interested in

???			???
% Δp	$K_{\text{sys } i}$	$K_{\text{sys } f}$	% ΔK
-5.7819	0.1934	0.1287	-33.4668
-3.0356	0.2748	0.19368	-29.5317
-4.6979	0.2043	0.13904	-31.927
-2.7595	0.2581	0.18289	-29.1298
-3.173	0.2663	0.1871	-29.7313
-7.1119	<u>0.42945</u>	<u>0.34733</u>	-19.1205
-3.5594	0.1859	<u>0.1532</u>	-17.5763
-8.0577	0.4758	<u>0.38113</u>	-19.9032
-1.4963	0.3549	<u>0.30711</u>	-13.4704
-2.9232	0.2223	0.18808	-15.3835

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