Accuracy of Q^{pk}_{VEM} fit for UB and UUB

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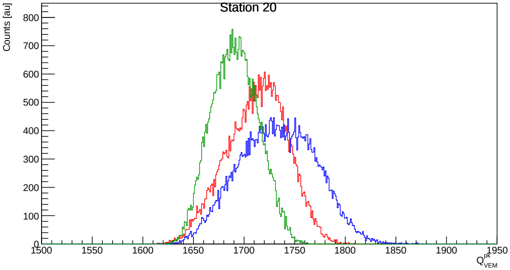
October 25, 2021

How does the accuracy was calculated?



For each PMT, we get the $Q_{\mathrm{VEM}}^{\mathrm{pk}}$ distribution, then

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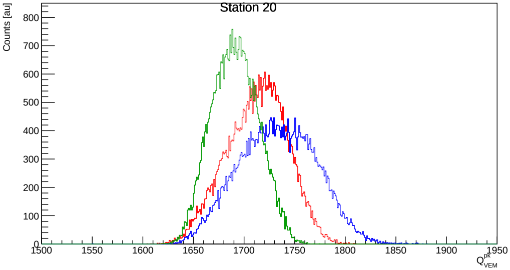

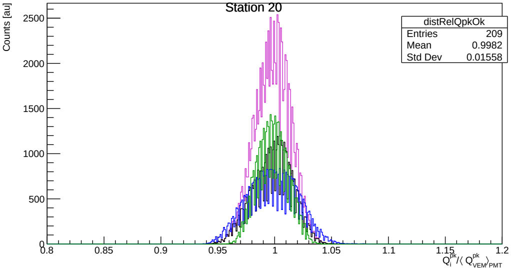

For each PMT, we get the $Q^{\mathrm{pk}}_{\mathrm{VEM}}$ distribution, then $Q^{\mathrm{pk}}_{i} / \left\langle Q^{\mathrm{pk}}_{\mathrm{VEM}} \right\rangle_{\mathrm{PMT}}$ was calculated.

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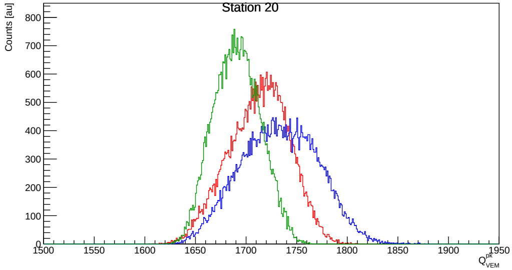
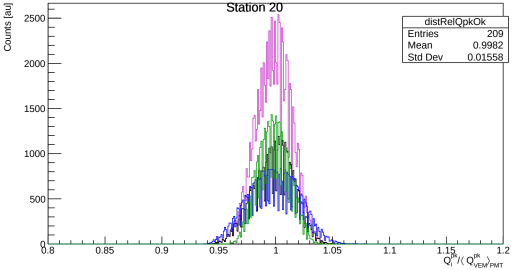


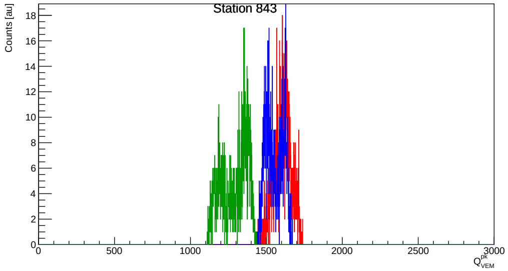


For each PMT, we get the $Q^{\mathrm{pk}}_{\mathrm{VEM}}$ distribution, then

$Q^{\mathrm{pk}}_{i} / \left\langle Q^{\mathrm{pk}}_{\mathrm{VEM}} \right\rangle_{\mathrm{PMT}}$ was calculated.

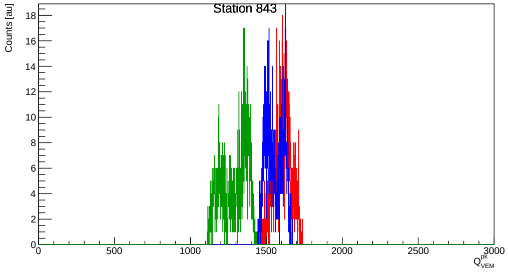
From the latest distribution (right plot, magenta line) the RMS is divided by the respective mean.

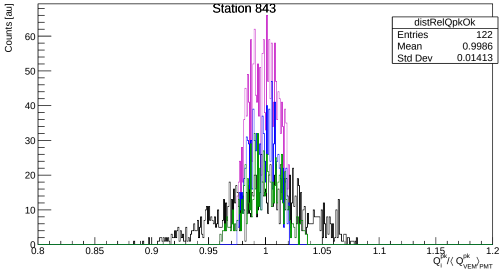
Before, some particular distributions for UUB



Multiple peaks for $Q^{\rm pk}_{\rm VEM}$ fitted.

Before, some particular distributions for UUB





Multiple peaks for $Q^{\mathrm{pk}}_{\mathrm{VEM}}$ fitted.

So, each peak (for each PMT) was fitted by a Gaus function, then the respective $Q^{\mathrm{pk}}_i / \left\langle Q^{\mathrm{pk}}_{\mathrm{VEM}} \right\rangle_{\mathrm{PMT}}$ was calculated for $Q^{\mathrm{pk}}_i \pm \sigma$, and using as $\left\langle Q^{\mathrm{pk}}_{\mathrm{VEM}} \right\rangle_{\mathrm{PMT}}$ the respective μ.

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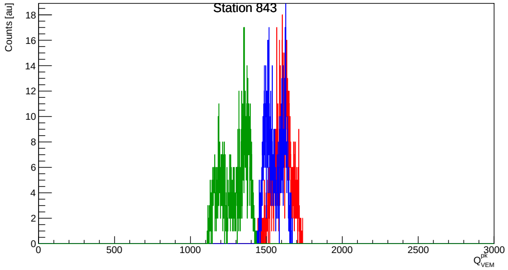

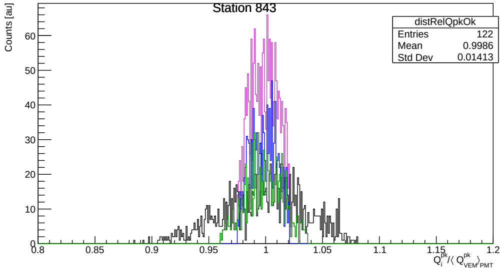

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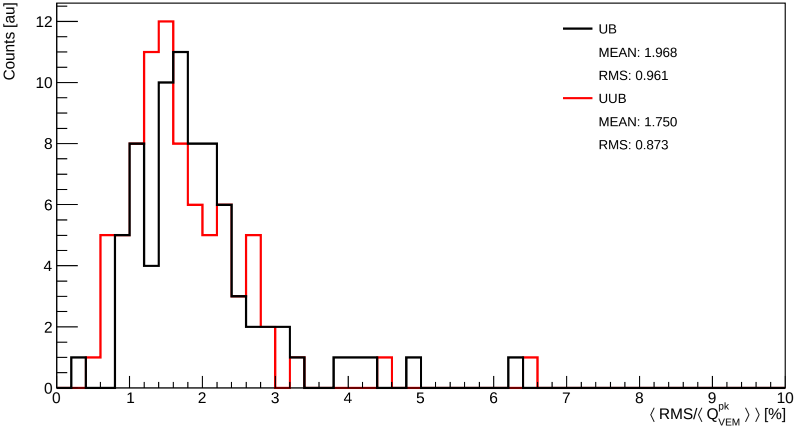
So, each peak (for each PMT) was fitted by a Gaus function, then the respective $Q^{\mathrm{pk}}_i / \left\langle Q^{\mathrm{pk}}_{\mathrm{VEM}} \right\rangle_{\mathrm{PMT}}$ was calculated for $Q^{\mathrm{pk}}_i \pm \sigma$, and using as $\left\langle Q^{\mathrm{pk}}_{\mathrm{VEM}} \right\rangle_{\mathrm{PMT}}$ the respective μ.

*See tables at the end for stations with this behavior, and their respective μ and σ.

Result RMS/Q_{VEM}^{pk} distribution all UUB station



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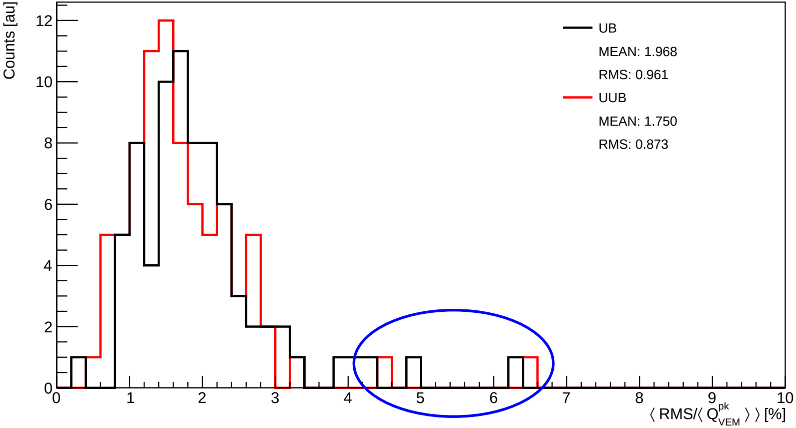
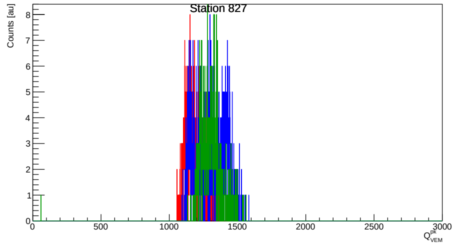
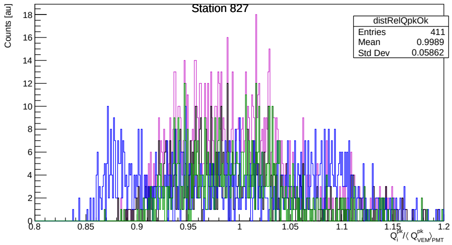
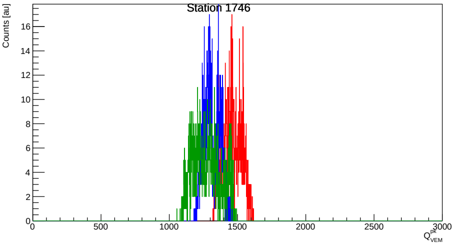
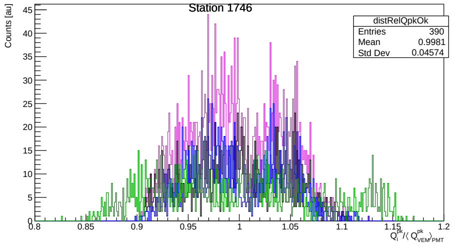


UUB Outliers stations: 827, 1746









Station ID.	PMT1		
	$\langle Q^{Pk}_{\mathrm{VEM}} \rangle_1$	$\langle Q^{Pk}_{\mathrm{VEM}} \rangle_2$	
22	1538.4 ± 16.63	1564.5 ± 19.53	
59	1384.9 ± 28.35	1448.8 ± 16.40	
545	1388.9 ± 23.63	1457.2 ± 18.34	
804	1376.7 ± 34.83	1429.9 ± 13.44	1481.7 ± 14.87
806	1395.2 ± 13.36	1443.5 ± 23.21	1499.7 ± 19.42
827	Too wide		
832	1356.7 ± 23.06	1392.7 ± 17.03	1457.7 ± 12.99
833	1262.2 ± 33.15	1343.3 ± 28.89	1436.6 ± 20.69
840	Too wide		
843	Too wide		
846	Too wide		
849	Too wide		
850	1347.9 ± 29.99	1463.0 ± 19.27	
853	1402.4 ± 21.46	1460.7 ± 16.02	
856	1239.7 ± 58.57	1319.0 ± 26.18	
861	1515.6 ± 14.95	1562.2 ± 14.91	
1216	1355.9 ± 39.13	1432.0 ± 16.66	
1217	1510.3 ± 84.27	1700.1 ± 43.02	
1219	1583.2 ± 25.06	1622.7 ± 26.08	

Station ID.	PMT1		
	$\langle Q^{Pk}_{\mathrm{VEM}} \rangle_1$	$\langle Q^{Pk}_{\mathrm{VEM}} \rangle_2$	
1220	1561.4 ± 40.91	1724.3 ± 74.87	
1221	1537.0 ± 25.53	1601.3 ± 25.74	
1222	1473.1 ± 24.12	1538.6 ± 27.05	
1779	1362.9 ± 51.11	1448.4 ± 20.86	
1791	1409.6 ± 44.61	1511.6 ± 23.72	
1819	1559.5 ± 23.59	1634.4 ± 26.80	
1854	1524.0 ± 83.75	1699.7 ± 28.70	

Station ID.	PMT2		
	$\langle Q^{Pk}_{\mathrm{VEM}}\rangle_1$	$\langle Q^{Pk}_{\mathrm{VEM}}\rangle_2$	
545	1224.0 ± 18.66	1301.3 ± 36.61	1374.3 ± 18.69
827	Too wide		
832	1394.5 ± 17.41	1443.9 ± 18.96	1498.8 ± 12.33
833	1233.2 ± 35.92	1327.0 ± 24.84	
840	1574.8 ± 10.83	1610.4 ± 18.79	
843	1508.1 ± 34.49	1611.2 ± 27.41	
846	1501.1 ± 32.44	1555.4 ± 26.92	
849	Too wide		
850	Too wide		
853	Extreme wide		
860	Too wide		
862	1286.7 ± 21.20	1399.3 ± 35.43	
1185	1481.3 ± 56.12	1655.2 ± 70.78	
1198	1435.4 ± 16.99	1496.5 ± 54.36	
1209	1769.9 ± 31.10	1842.1 ± 21.64	
1218	Too wide		
1220	1362.5 ± 34.20	1713.2 ± 29.28	
1224	1574.0 ± 23.46	1630.4 ± 18.84	
1225	1646.7 ± 28.46	1701.1 ± 29.44	

Station ID.	PMT2		
	$\langle Q_{\mathrm{VEM}}^{Pk} \rangle_1$	$\langle Q_{\mathrm{VEM}}^{Pk} \rangle_2$	
1737	1102.6 ± 20.85	1384.4 ± 36.89	
1738	1359.6 ± 41.70	1452.7 ± 22.72	
1746	1276.2 ± 36.99	1365.5 ± 30.44	

Station ID.	PMT3		
	$\langle Q^{Pk}_{\mathrm{VEM}} \rangle_1$	$\langle Q^{Pk}_{\mathrm{VEM}} \rangle_2$	
804	1382.1 ± 27.80	1413.1 ± 15.37	
827	Too wide		
836	Too wide		
840	1492.1 ± 25.35	1522.3 ± 13.97	1566.7 ± 12.73 1615.3 ± 14.11
843	1187.5 ± 46.11	1366.5 ± 30.39	
846	1385.1 ± 29.16	1433.0 ± 19.41	
849	1392.9 ± 50.81	1502.0 ± 32.14	
850	Too wide		
853	1266.0 ± 18.60	1326.7 ± 18.04	1400.9 ± 15.94
860	1497.9 ± 24.31	1600.2 ± 39.01	
861	1478.8 ± 88.22	2095.8 ± 16.51	
868	1176.3 ± 73.62	1413.5 ± 18.31	
1190	1623.3 ± 18.98	1672.9 ± 22.20	
1207	1457.1 ± 48.97	1603.4 ± 25.25	
1214	1528.2 ± 39.96	1614.1 ± 23.33	
1216	1255.5 ± 45.59	1328.7 ± 17.44	
1218	1566.5 ± 65.43	1634.9 ± 48.59	
1220	1586.0 ± 18.76	1699.0 ± 17.64	
1221	1481.6 ± 37.73	1539.3 ± 22.92	

Station ID.	PMT3		
	$\langle Q^{Pk}_{\mathrm{VEM}} \rangle_1$	$\langle Q^{Pk}_{\mathrm{VEM}} \rangle_2$	
1222	1234.5 ± 25.37	1344.4 ± 26.11	
1223	Too wide		
1729	1518.5 ± 33.06	1620.5 ± 19.40	
1737	1431.4 ± 80.14	1583.5 ± 89.71	
1738	1480.7 ± 28.10	1551.5 ± 32.52	
1854	1334.0 ± 62.91	1489.6 ± 103.39	
1880	1245.8 ± 48.18	1365.4 ± 48.03	