

Space charge in drift chambers operated with the Xe,CO₂ mixture and its influence on electron/pion identification

Addendum

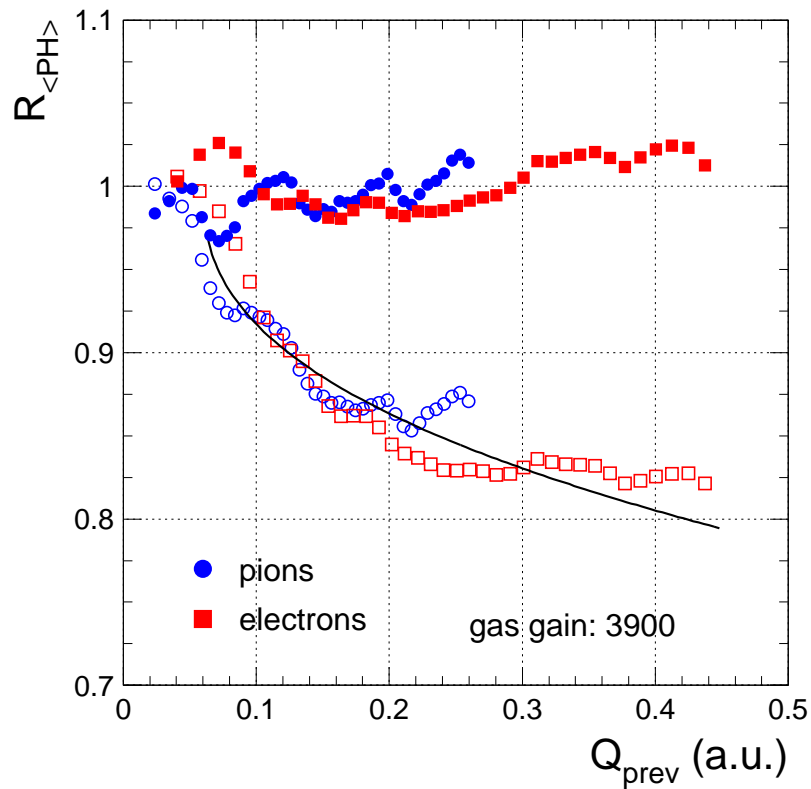


Fig. 1. The relative decrease of the measured average pulse height for electrons and pions as a function of the total charge recorded before a certain drift time, Q_{prev} . The data are for the gain of 3900, before (open symbols) and after (full symbols) correction. The curve represents the function $k(Q_{prev} - Q_0)^{0.4}$ used for the correction of the space charge effects.

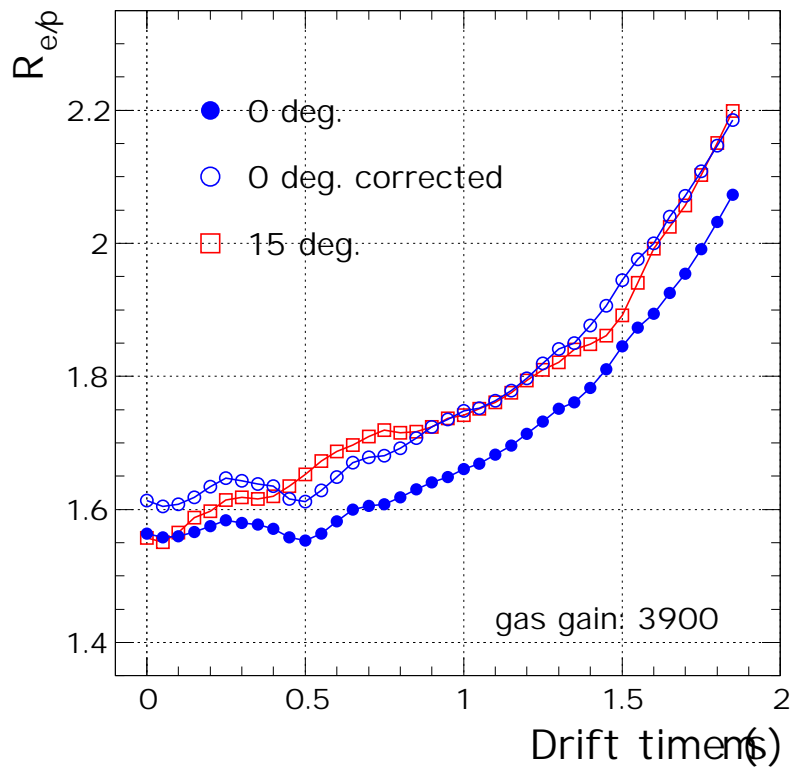


Fig. 2. The ratio of average pulse height for electrons and pions, $R_{e/\pi}$, as a function of drifttime for the gain 3900. The results at 0° are compared before and after correction and with the values for 15° .

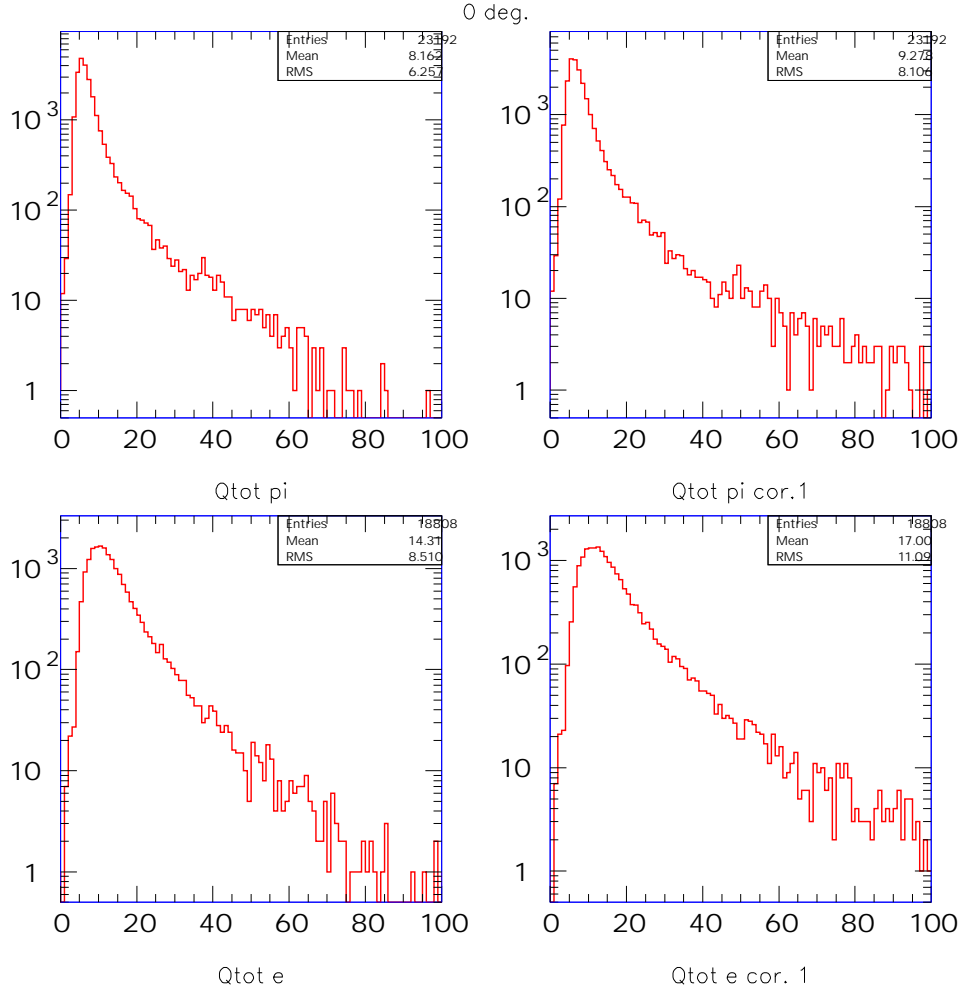


Fig. 3. Charge spectra for pions (upper row) and electrons (lower row), before (left column) and after (right column) the correction. The gas gain is 3900.

Table 1

Ratio of average total charge of electrons and pions and RMS values of the charge distributions before and after correction at 0° compared to the values at 15° .

	$\langle Q \rangle_e / \langle Q \rangle_\pi$	RMS π (%)	RMS e (%)
0°	1.75	77	59
0° corr.	1.83	87	65
15°	1.89	71	56