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Two Comments on dE/dx & dN/dx Simulation Results

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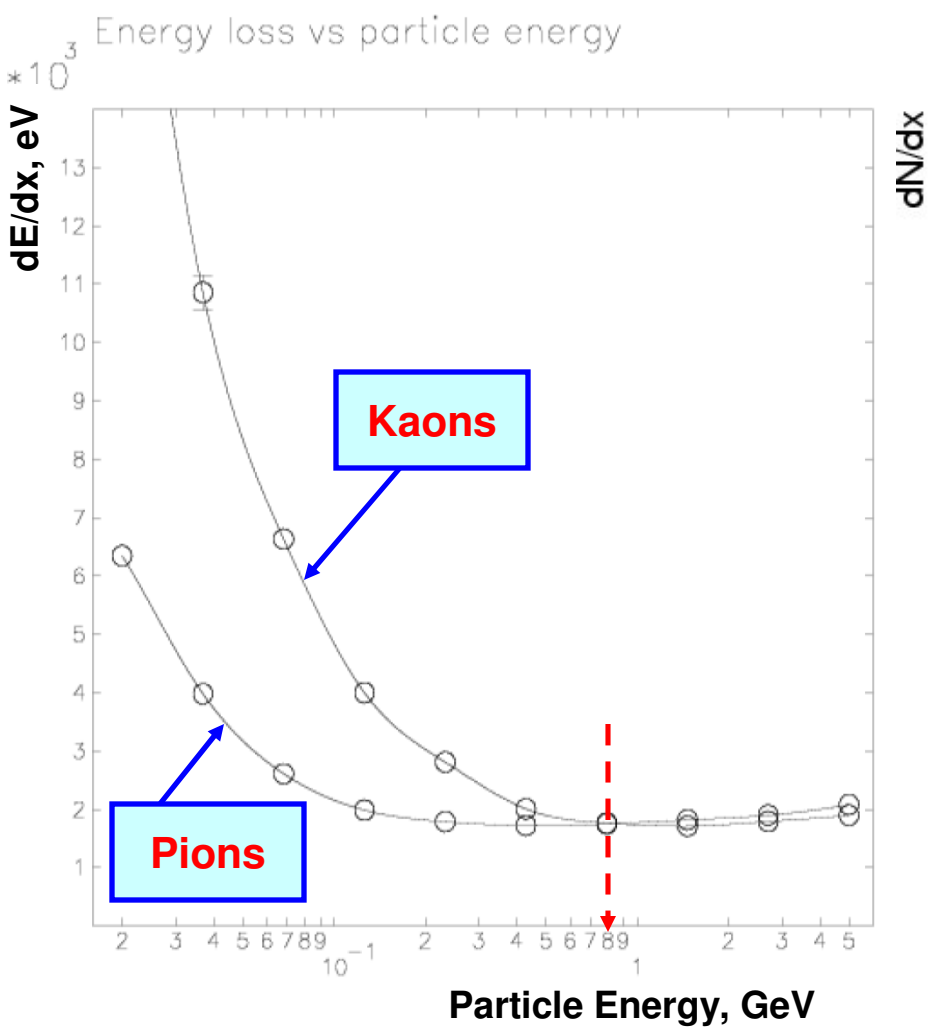
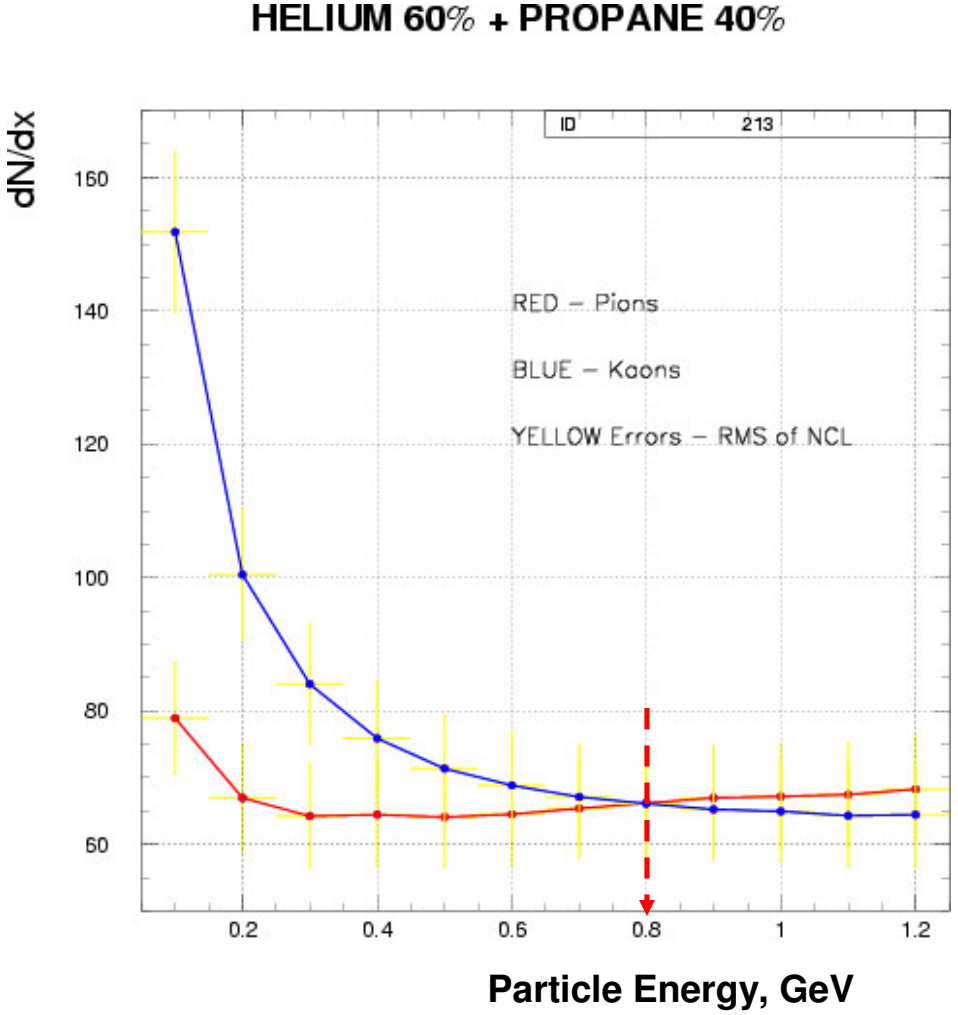
1. Consistency of dE/dx and dN/dx Simulations in Garfield

Garfield simulation is internally consistent.
Both dN/dx and dE/dx have zero K/pi separation around 800 MeV.

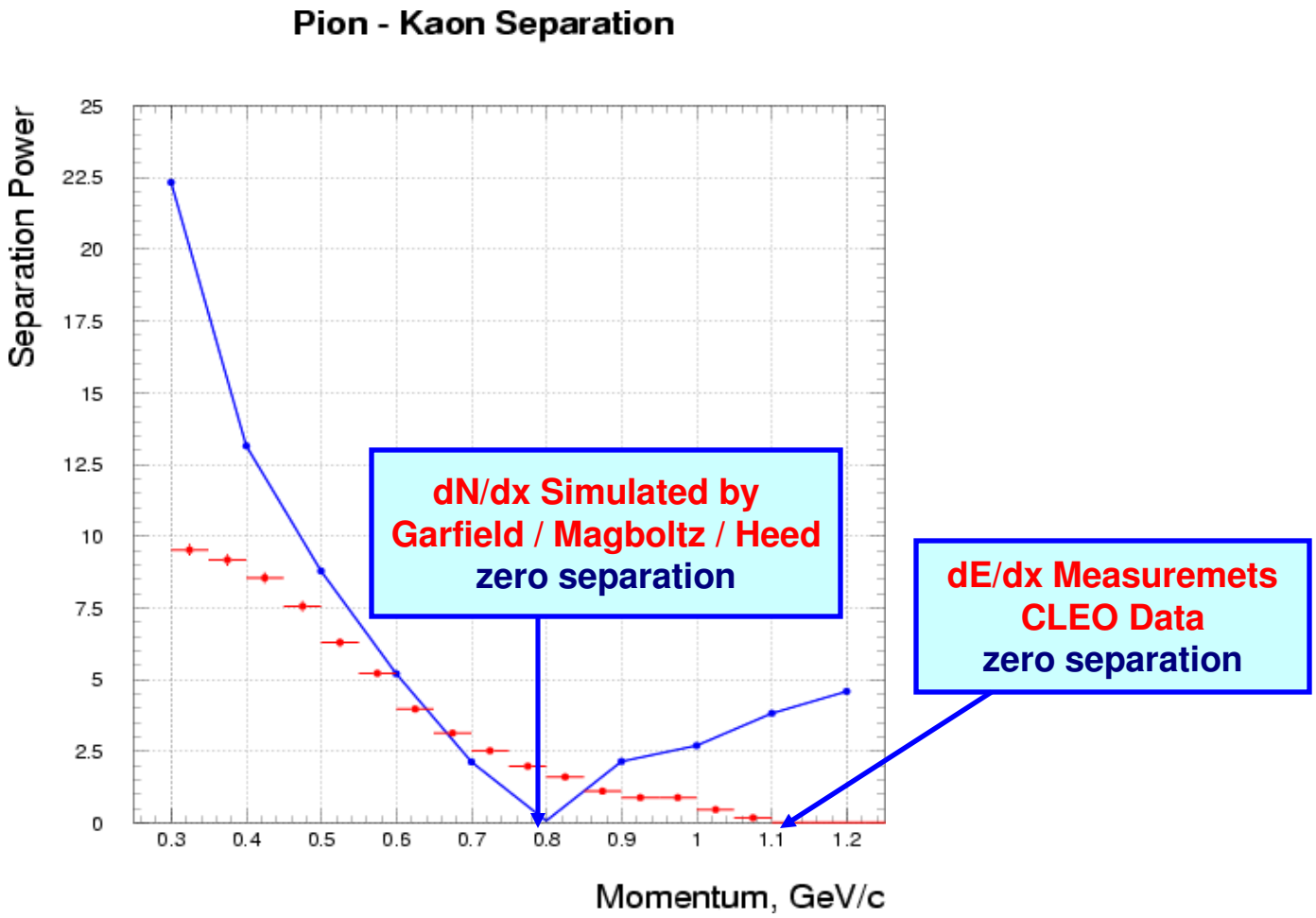




2. Pion – Kaon Separation. dE/dx & dN/dx Comparison.

If N_{Layers} of cells providing dN/dx measurements, then a separation power

$$\sigma_{Sep.}^{MC} = \sqrt{N_{Layers}} \times \frac{| M\,(dN/dx)_{\pi} - M\,(dN/dx)_{K} |}{(RMS\,(dN/dx)_{\pi} + RMS\,(dN/dx)_{K})/2}$$



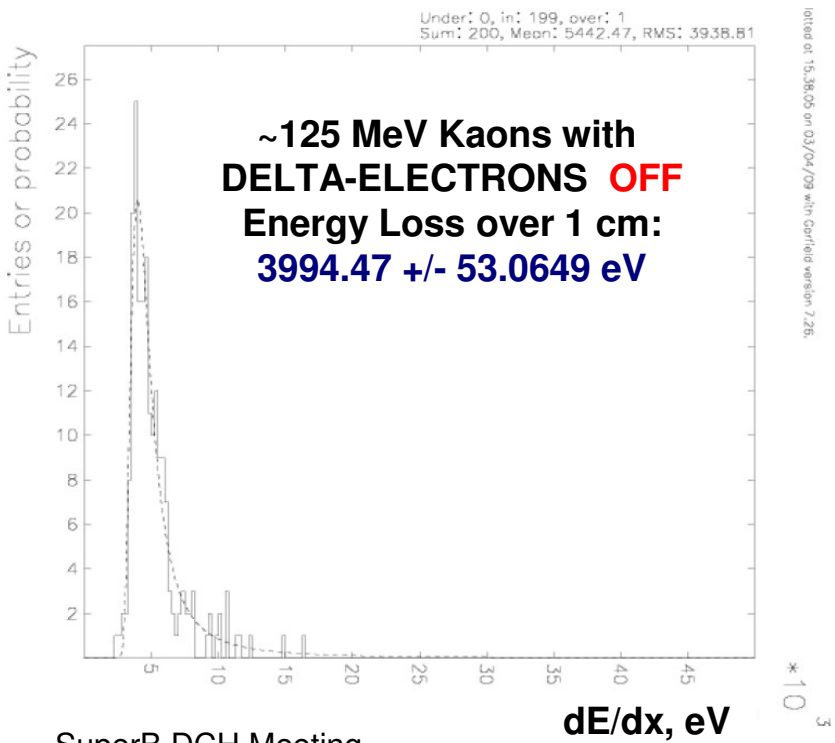
Delta-Electrons Option in Garfield

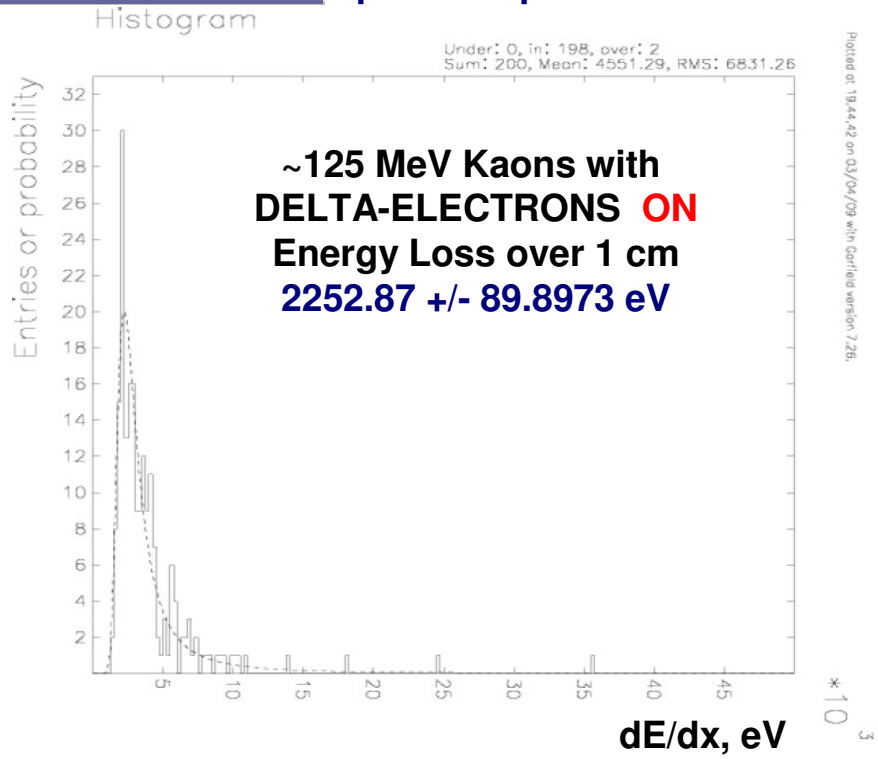
Delta electrons have a sufficiently low energy to be affected by the E and B fields present in the chamber.

When delta-electrons option is switched on, they are traced from one collision to the next following the E and B field.

Tracing of delta-electrons is a time consuming operation.
When we studying only the cluster statistics we can switch tracing off.

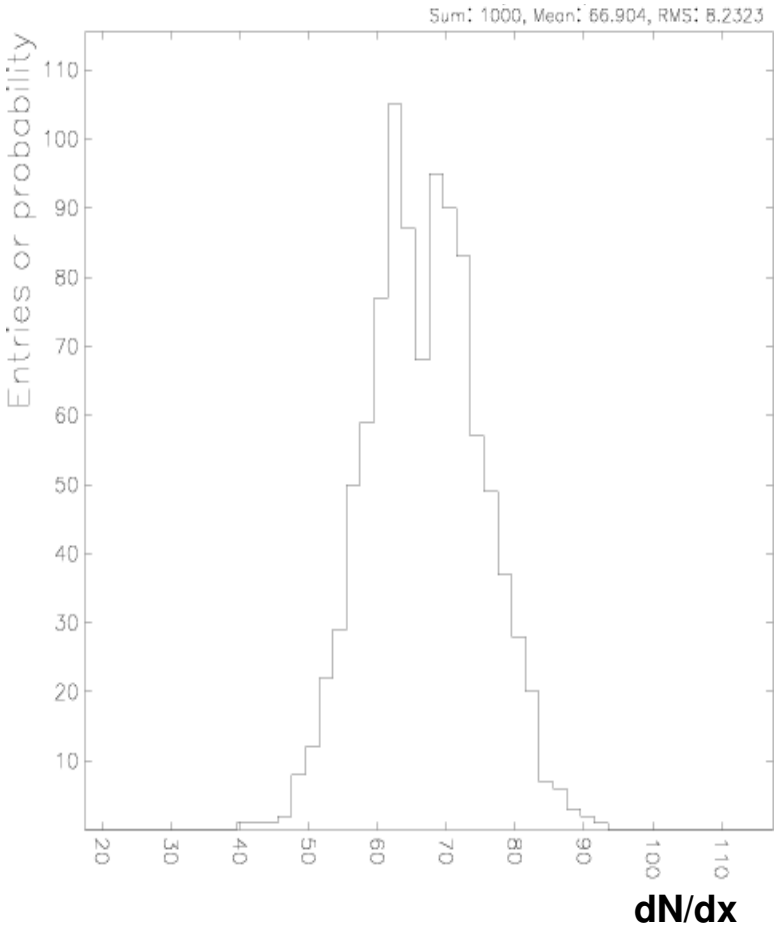
Delta electrons are not traced either when the NODELTA-ELECTRONS option is specified.



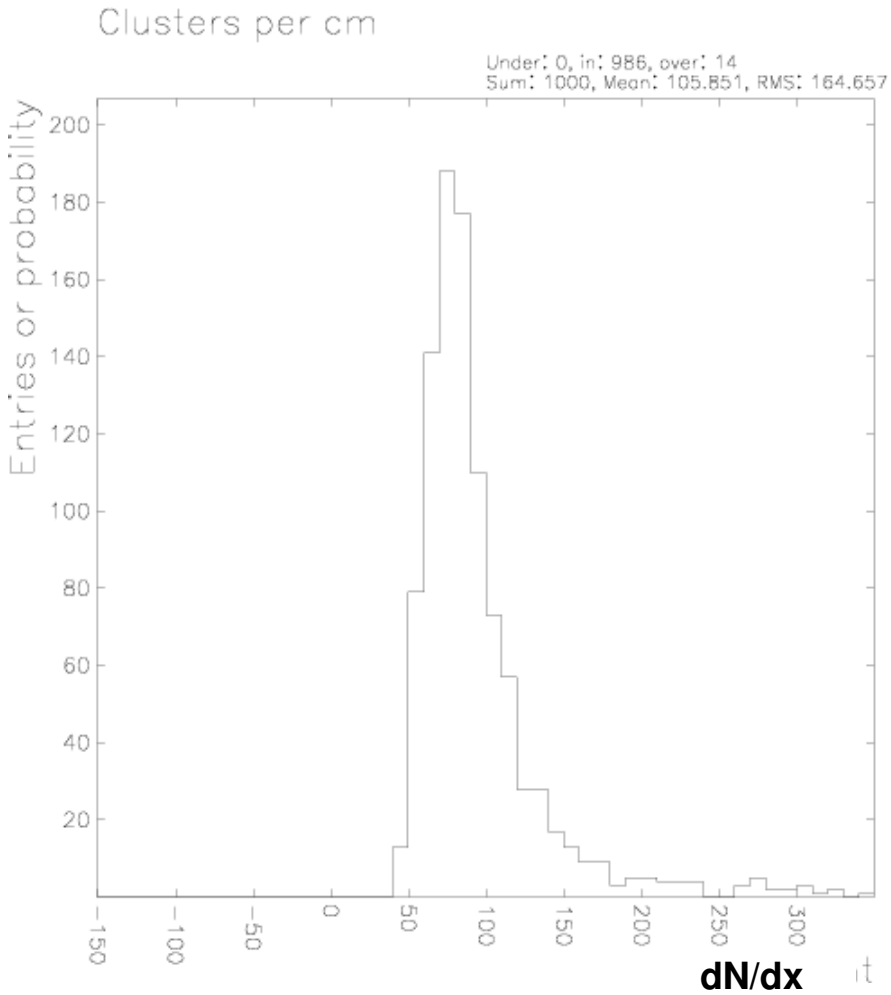


Delta-Electrons Option in Garfield, cntd.

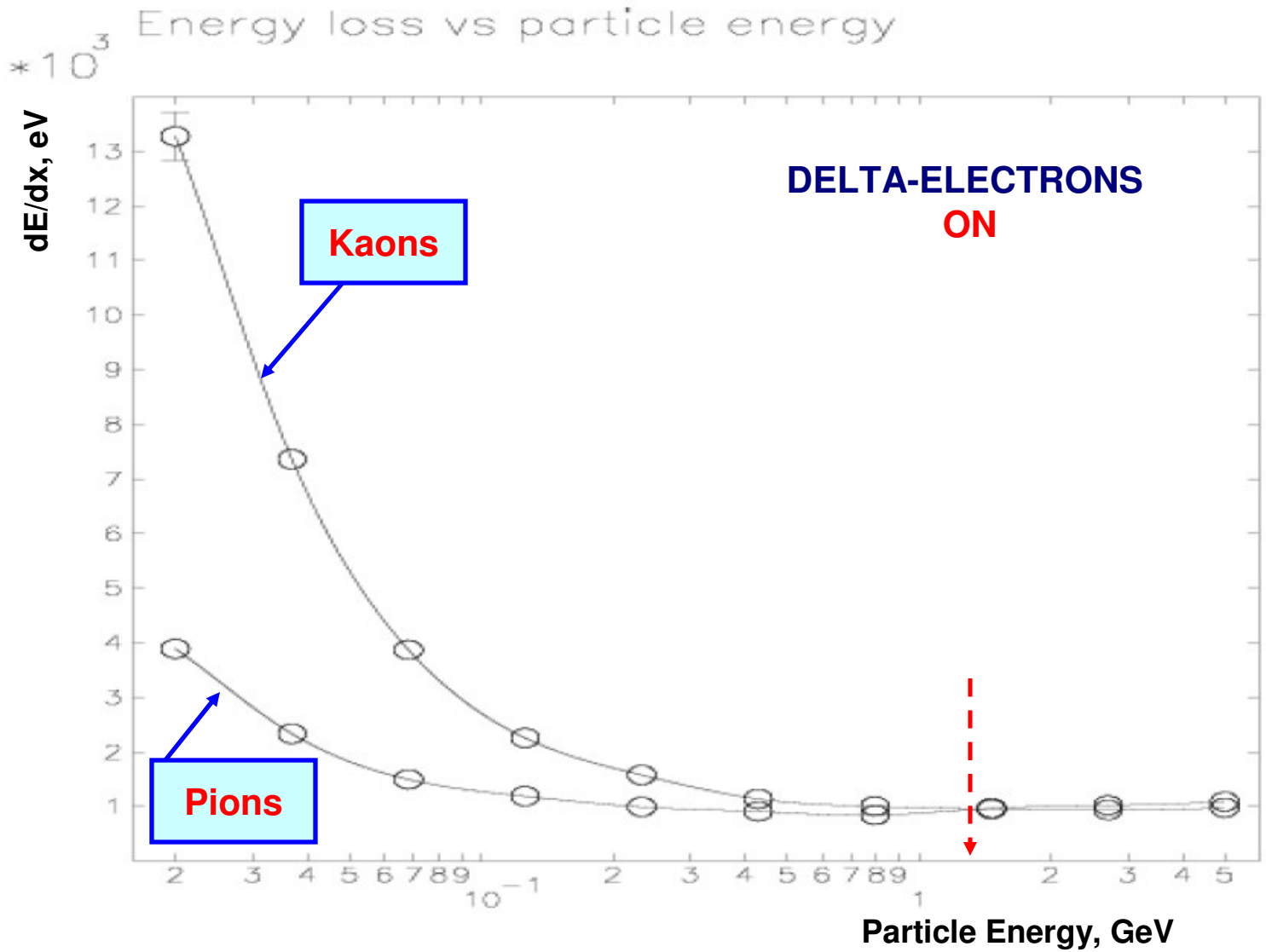
200 MeV pions with DELTA-ELECTRONS OFF



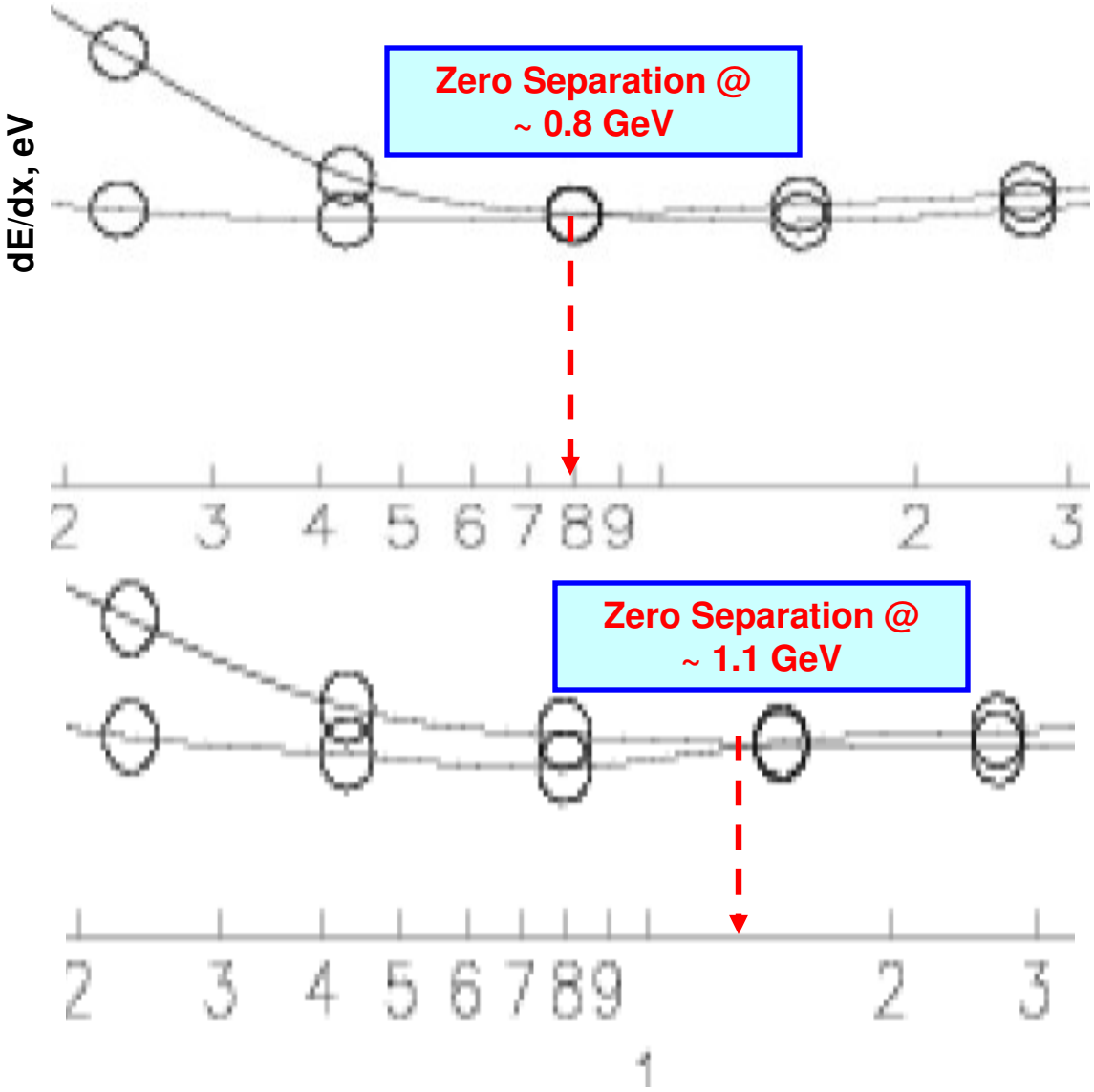
200 MeV pions with DELTA-ELECTRONS ON



dE/dx vs Particles Energy with Delta-Electrons Option



dE/dx vs Particles Energy with/without Delta-Electrons Option



DELTA-ELECTRONS OFF

DELTA-ELECTRONS ON