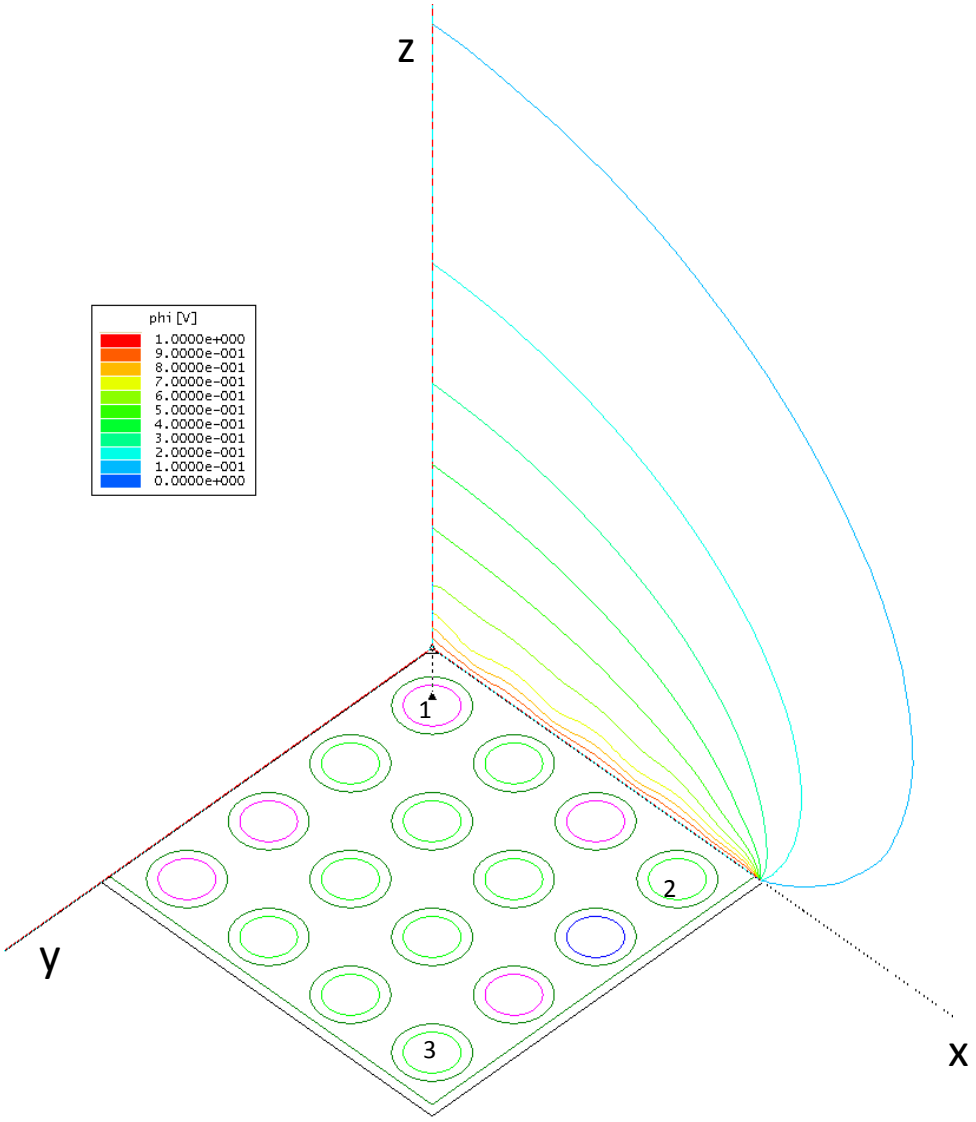
FEA Model

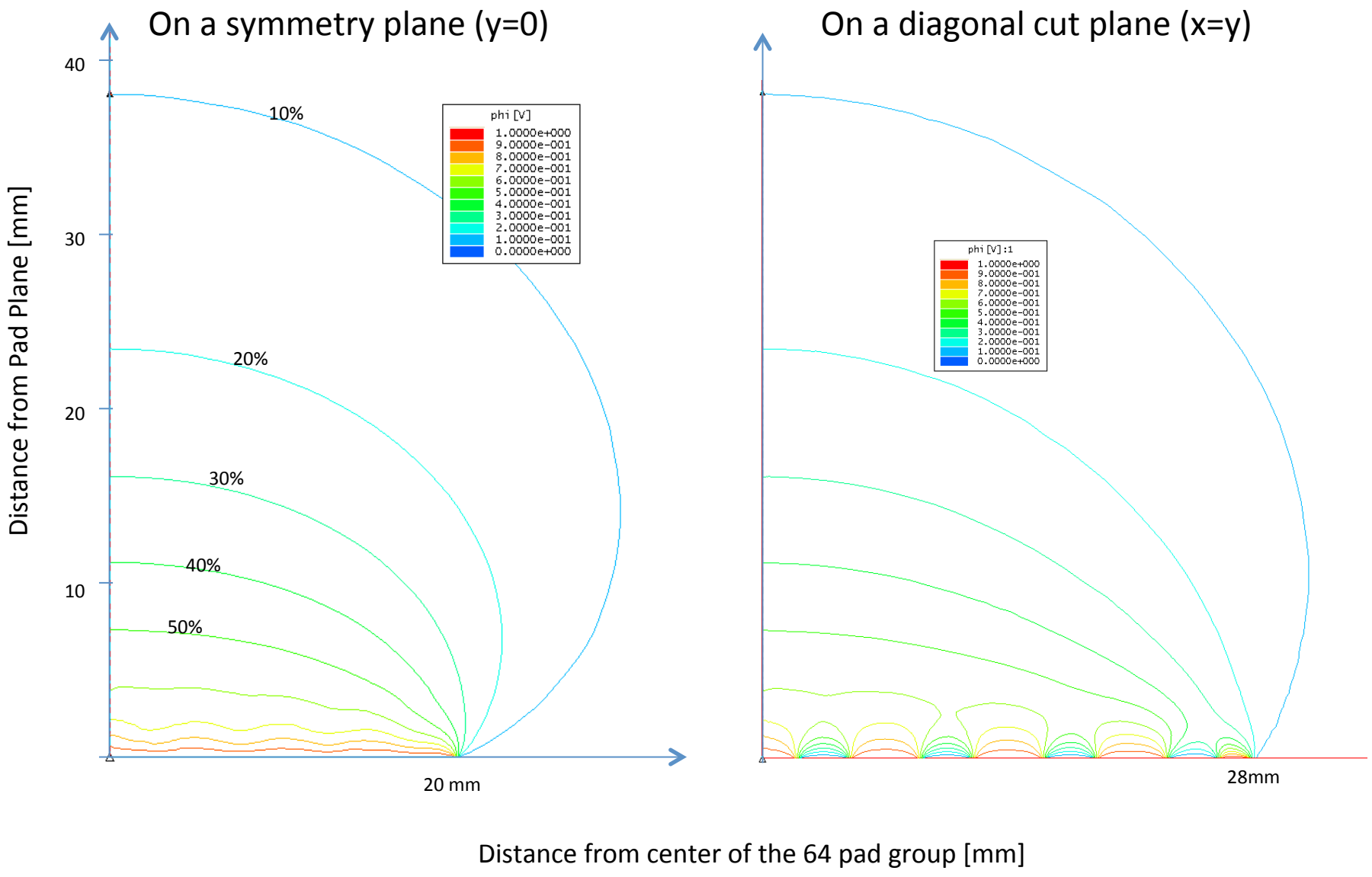
The model represents ¼ of the 64 channel pad group with one induction pad. The collection pixels are circles with diameter of 2.5mm at a pitch of 5mm. The induction pad covers a 39.5mm x 39.5mm area. The gap between electrodes is 0.5mm.

The problem volume is 1m on each axis. Two faces of the volume (x=0, y=0) are mirror symmetry boundaries to simulate the full 64ch group.

This weighting potential distribution is obtained with the induction pad at 1V, while all other electrodes are grounded.

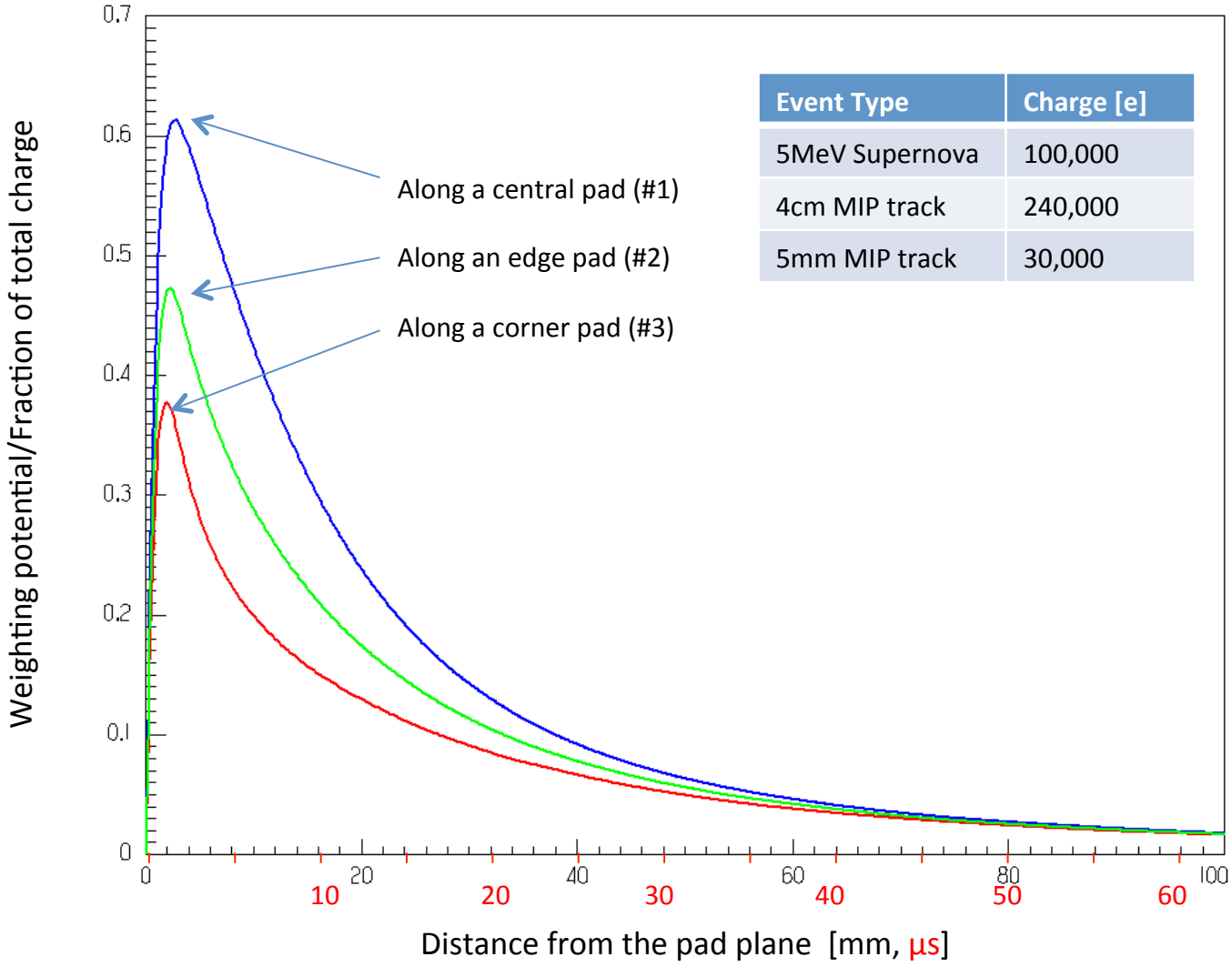


Weighting Potential Contour on two Cut Planes



Weighting Potential vs Distance

These are the weighting potential values along 3 drift lines centered on 3 collection pads (labeled on the first slide). There is significant delay in the induced current rise time on for the edge and corner pixels. On the other hand, these events will induce signal on the adjacent induction pads. Perhaps a lower threshold and adjacent induction pad coincidence logic could help.



Event Type	Charge [e]
5MeV Supernova	100,000
4cm MIP track	240,000
5mm MIP track	30,000