VHMPID Progress Report

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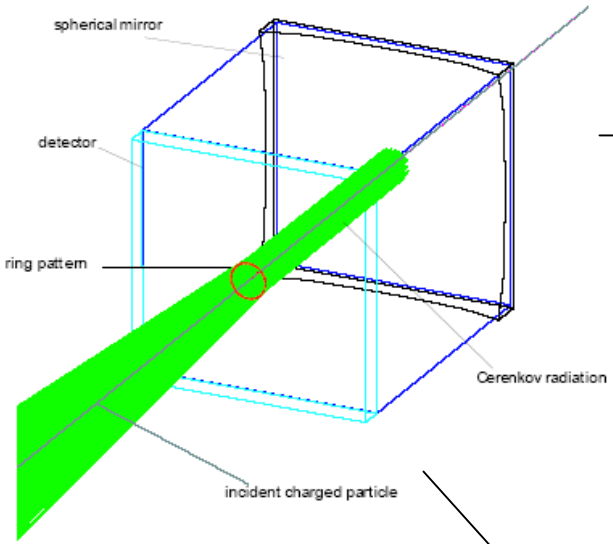
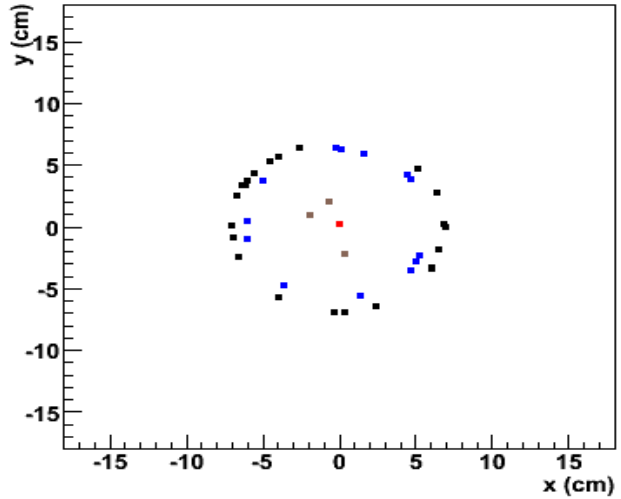
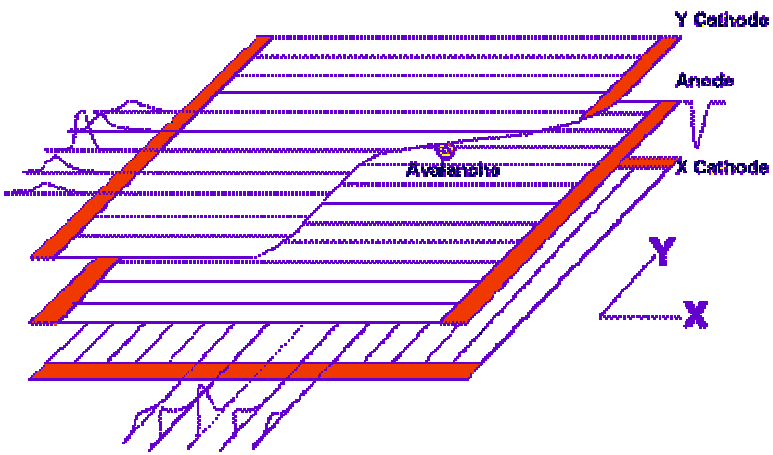
ICN Septiembre 20, 2207

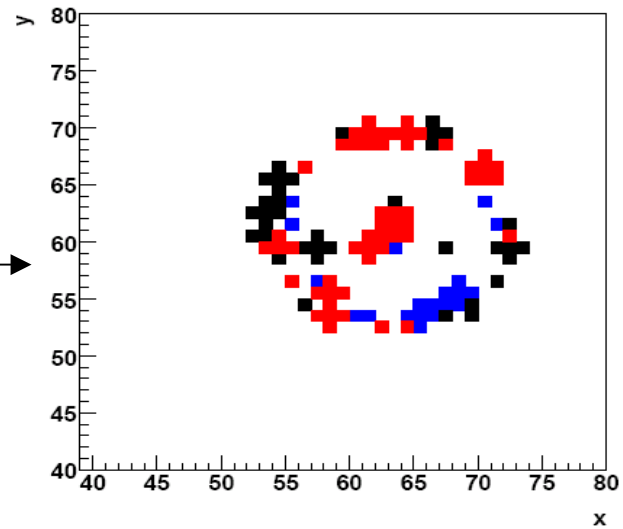
Simulation of the MWPC Response

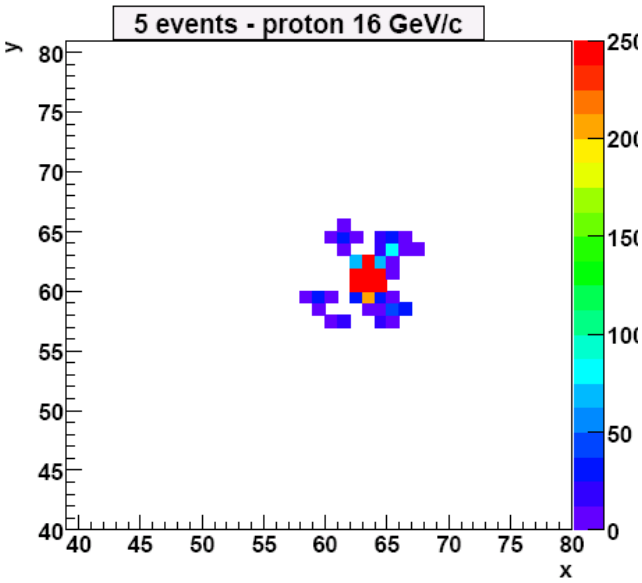


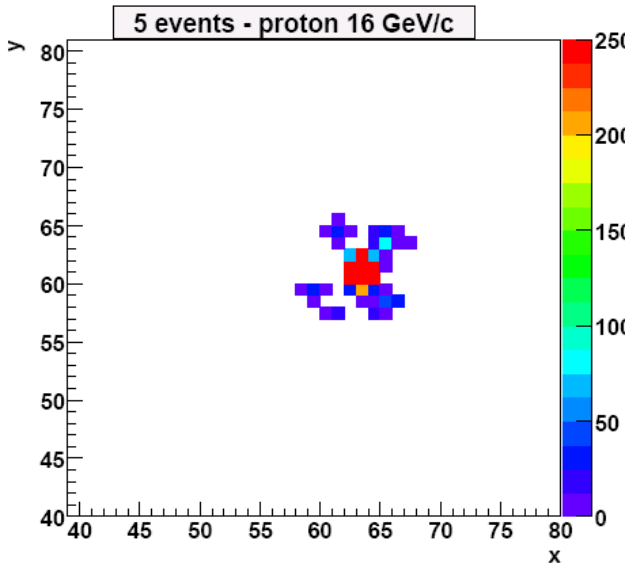


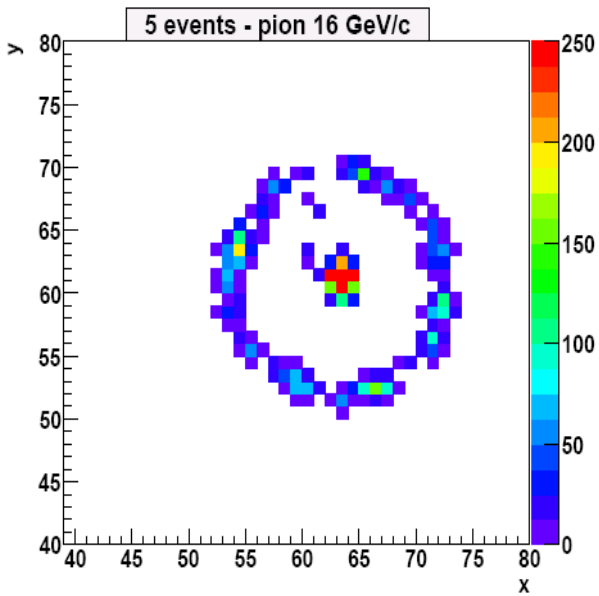
122 by 120 pads - 8mm^2 pads



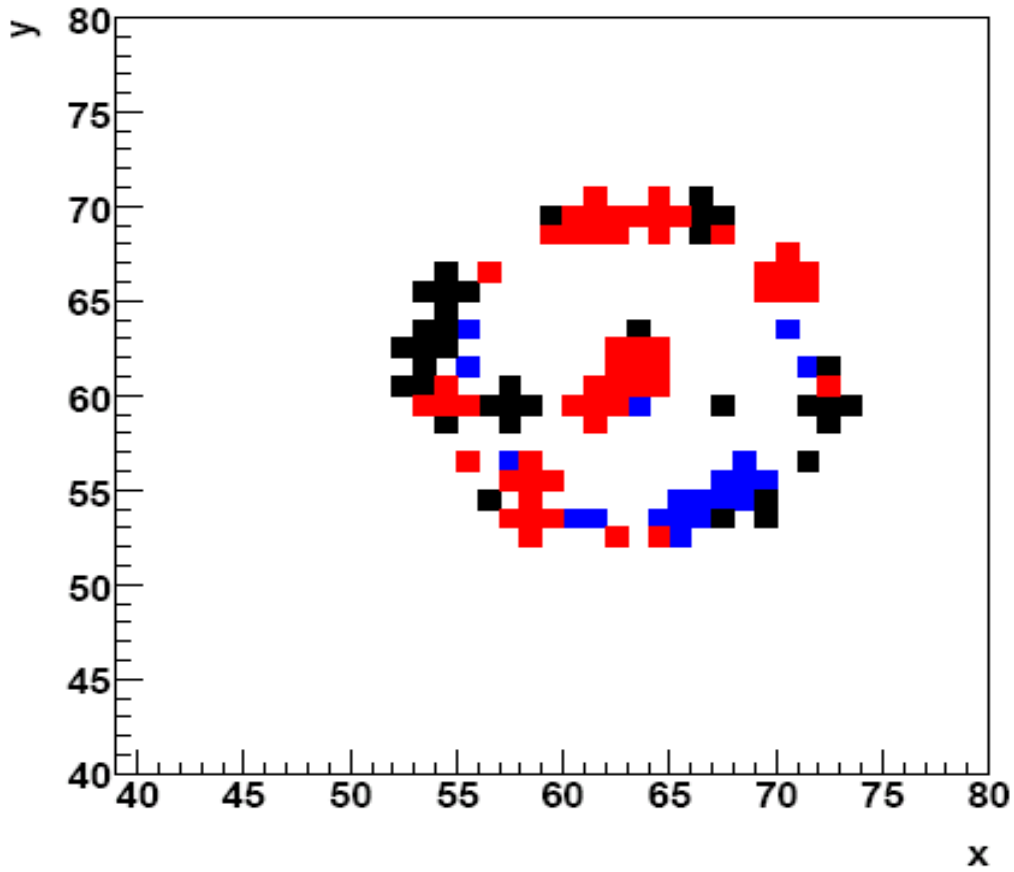




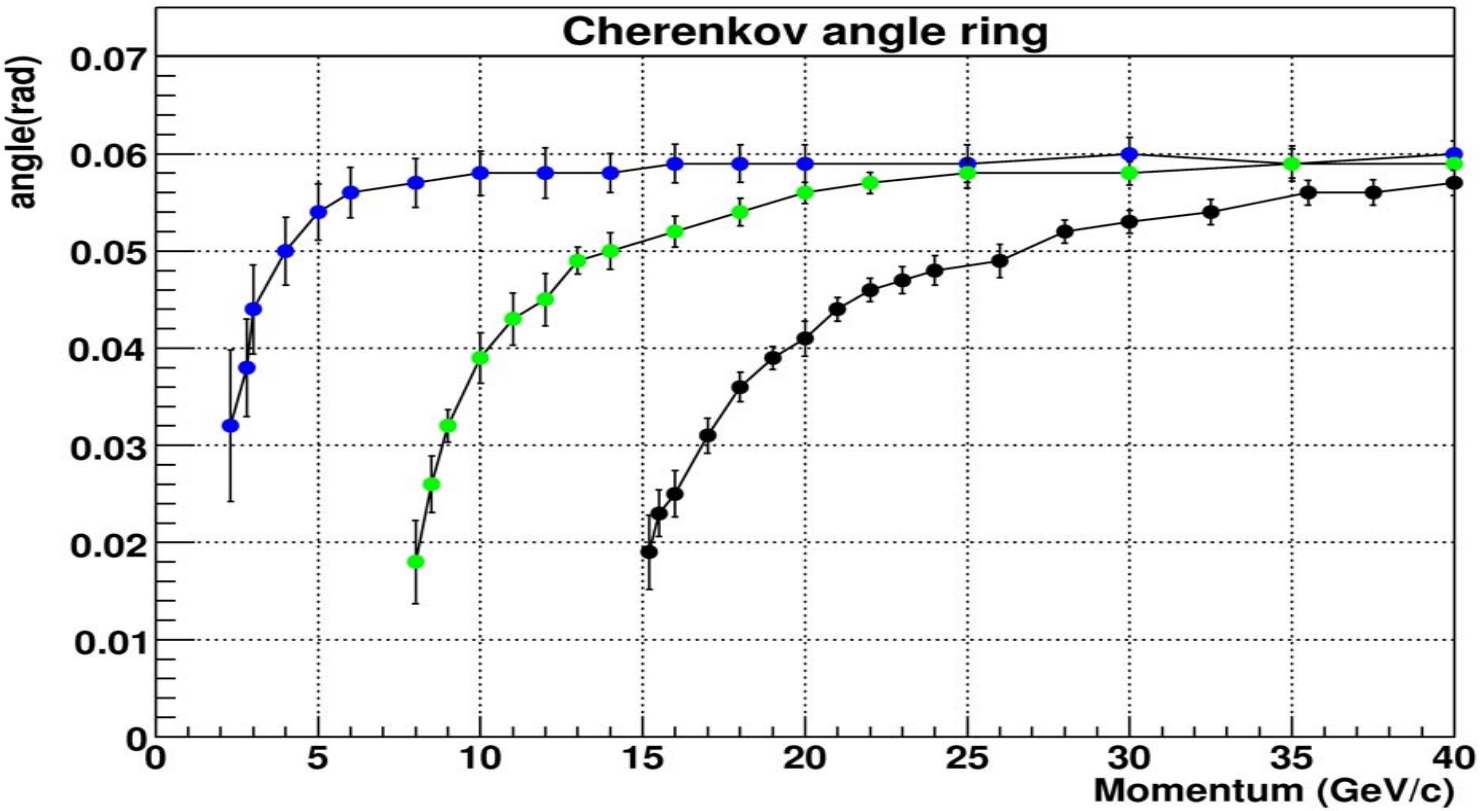




Ring trace for 5 superimposed 16 GeV/c events. Protons (left), kaons (center) and pions (left).

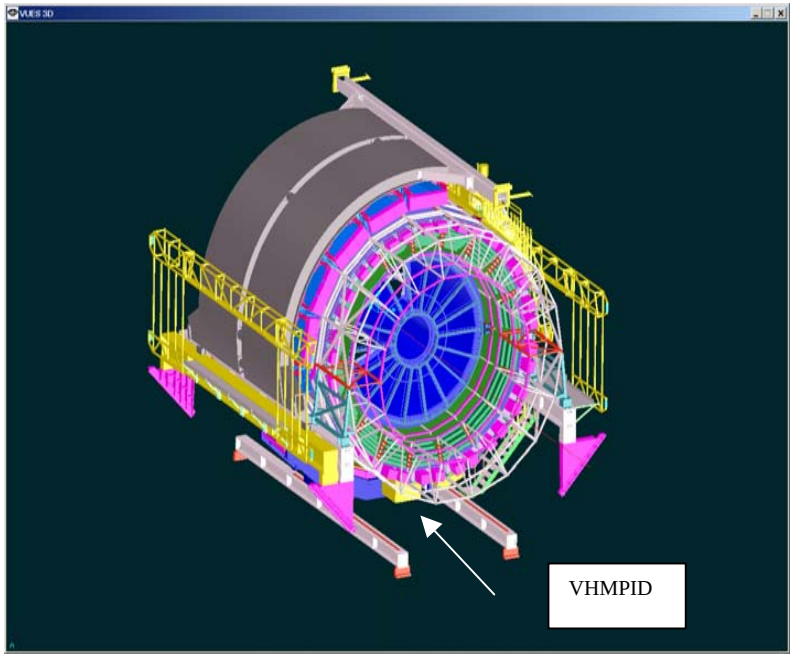


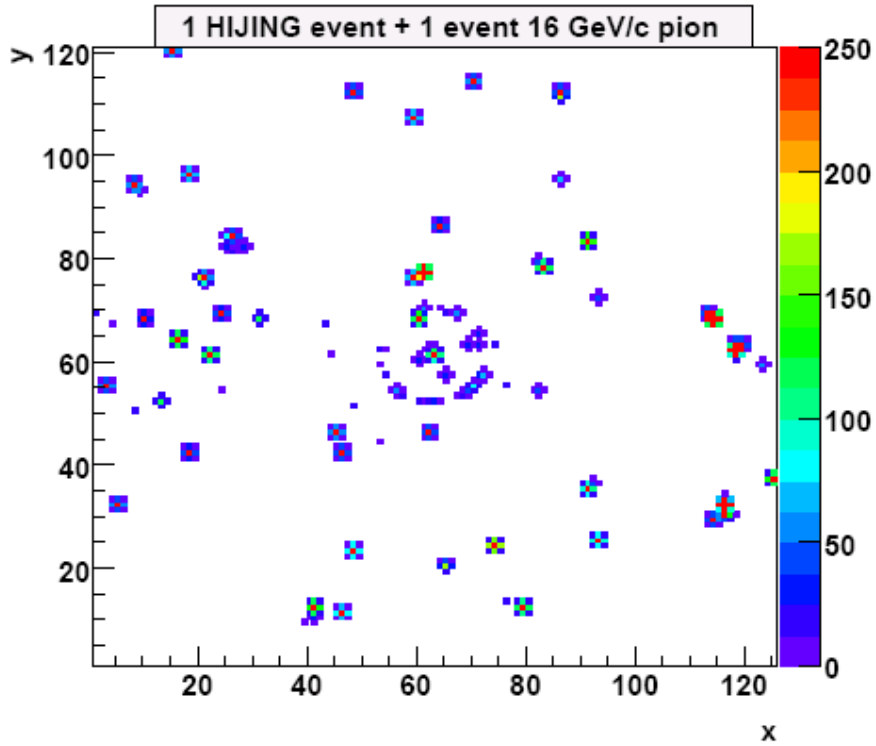
Ring trace for 3 superimposed 16 GeV/c events. Protons (red), kaons (blue) and pions (black).



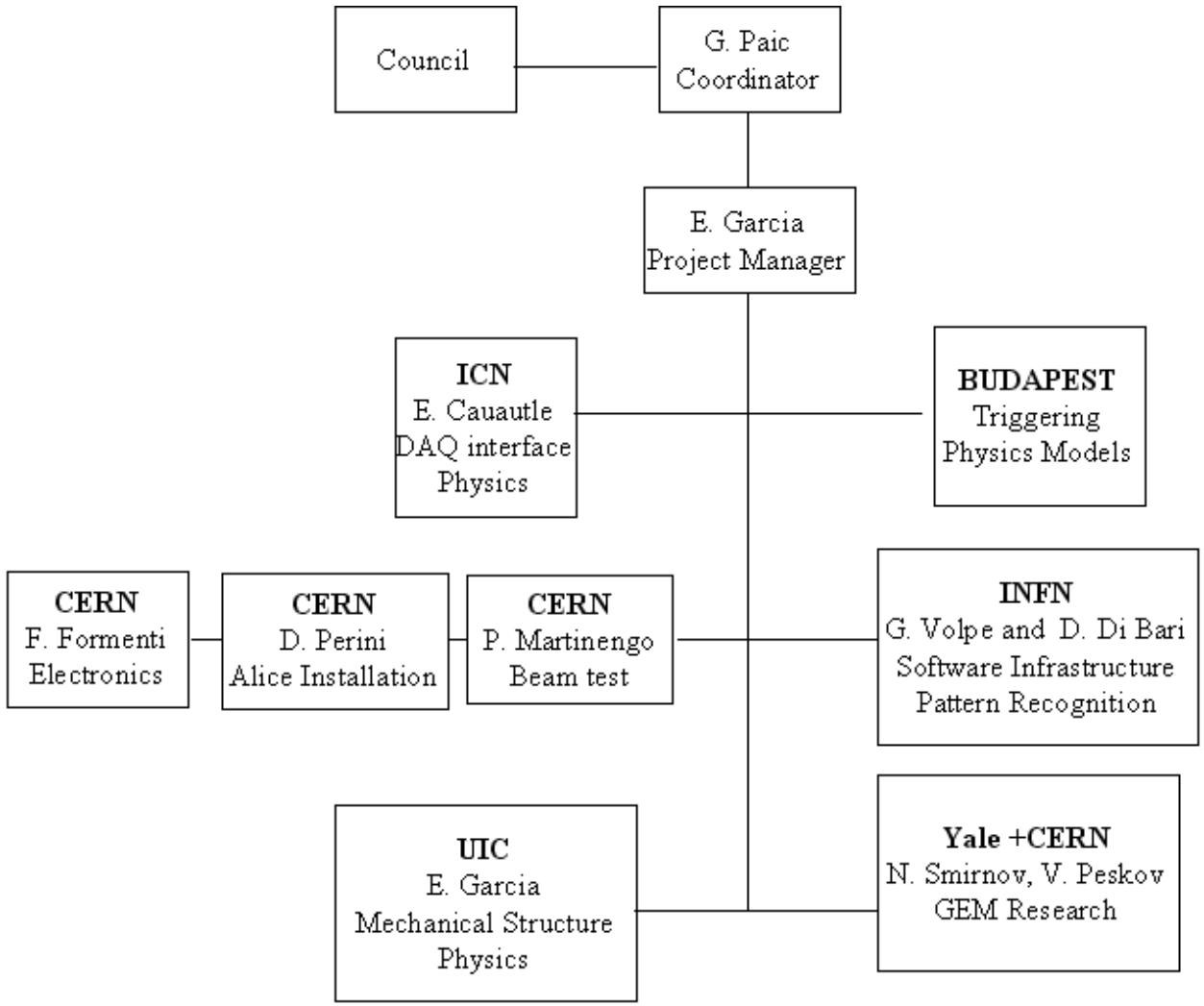
The Cherenkov angle is reconstructed for each photon individually, then the average value is calculated as where N is the number of photons in each ring.

$$\theta_{Cherenkov} = \sum \theta_i / N$$





A pion track is embedded in a = 5.5 TeV Pb+Pb HIJING [20] event with a pessimistic charged particle multiplicity $dN_{ch}/dy \sim 4000$ at mid rapidity. When the full simulation and reconstruction is carried out, the trace from the pion is clearly identifiable in the VHMPID above the background,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