

## Report on T487 for “KEK Annual Report 2001”

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Aiming at developing new techniques to measure neutrino flux in future experiments, Experiment T487 studied basic performance of compact ECC(Emulsion Cloud Chamber) for measuring the momentum of charged particles and also for identifying electrons. A stack of compact ECC was exposed to a 4 GeV/ $c$  pion beam at the KEK PS  $\pi 2$  beam line. As a result of analysis, resolution of the momentum measurement by multiple scattering in 20 emulsion and lead plates was estimated to be about 20%. The behavior of pions in the ECC was compared with that of electrons in a different stack of ECC exposed to a pure electron beam. It was confirmed that, even in such low-energy(a few GeV/ $c$ ) regions, electrons could be identified in the ECC. Another type of emulsion stack with low-density spacers, inserted in a small permanent magnet, was exposed to 1 GeV/ $c$ , 2 GeV/ $c$  and 4 GeV/ $c$  pion beams. From the curvature measurement, momentum of pions and the sign of their charge could be determined. However analysis also revealed that some distortion was produced in the spacers, which is a problem to be solved in the stack production.