Digital HCAL and E-flow algorithms

- Proposal submitted (jointly with UTA) for feasibility study of digital hadronic calorimetry and use of E-flow algorithms with LCD as a case study.

- Acquire/develop simulation software.

- Build prototype: scint (NIU)/MSGC (UTA).

- Contribute to worldwide NLC studies.
Near-term plans (Jan workshop)

- Study shower containment. Working together with Fisk et al. on leakage into muon system.
- Preliminary studies of a digital algorithm (at least simple cell-counting).
- For both, use single pion samples at discrete energies (2-200 GeV) uniformly distributed all over the barrel calorimeter. Requirements on segmentation, depth etc. decided, samples are being generated.
Near-term plans (Jan workshop) [contd.]

- Full software suite including event generation (Pandora-Pythia), detector simulation (GI SMO), reco+analysis (J AS) ported to NIC ADD (thanks, Rob!).
- Presentations:
  - E-flow/segmentation – Vishnu Zutshi
  - DHCAL proposal, leakage studies – Dhiman
  - Software porting experience – Rob McIntosh
Long-term plans

- Need ability to define more complicated detector geometry (granularity as function of depth, hexagonal cells,…).

  - Will collaborate in switching to GEANT4.
  - Optimization of detector geometry, E-flow algorithm(s).
  - Prototype: simulation (Spring ’02), construction (Summer-Fall ’02), beam-test (mid-2003?).
  - Linux farm? (depends on experience, demand)
  - Additional members interested in muon system.