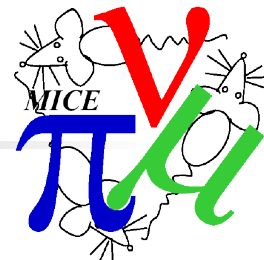
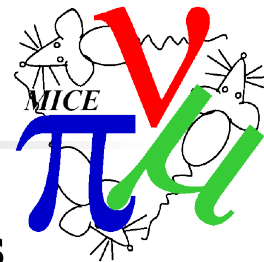


# How to turn on MICE Step IV



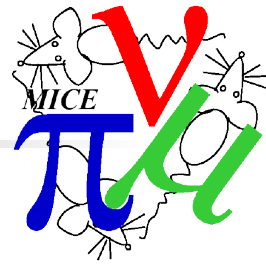
- Turn on Q1-3, D1, DS, D2
- With no field
  - Check TOF0-TOF1 alignment
- Turn on Q4-6, Q7-9
- Check beamline detectors report sigma x, sigma y consistent with Step I running
  - Re-optimize if things have moved
  - Check TOF1-tracker0-tracker1 alignment
- Turn on Spectrometer Solenoid 0 and run as a focus into tracker 1 (to make good beam rate)
  - Check tracker1-TOF2-KL-EMR alignment
- Ramp coils in FC and each SS individually
  - Check sigma x, sigma y moves in the expected manner
- Turn on SS0, SS1, FC
  - Check flat sigma x, sigma y in the spectrometer solenoids
- Nb: can use pion mode for improved rates

# Step IV operations



- What software do we need online for **Step IV operations**
- Straight tracks => alignment
- To check magnet focus strength + alignment
  - **Either** fit beam envelope to  $\geq 3$  planes in tracker/TOF
  - **Or** track fit to  $\geq 2$  planes in tracker/TOF
  - **Then** propagate tracks/envelope between trackers
  - Assume offline field mapping makes this unnecessary? Ass+u+me
- Additional thoughts
  - PID probably not req'd (pions upstream, electrons downstream)?
  - Tracker momentum important if we have a large  $p_z$  spread
    - Need to cut on  $p_z$  to reduce to linear optics
    - Or just do full track fit

# What do we need?



- User interface
  - Visualisation
    - **No one assigned**
    - Existing prototype code but needs clean up and some new functionality
      - ~ 50 % done
  - Online reconstruction/data quality plots