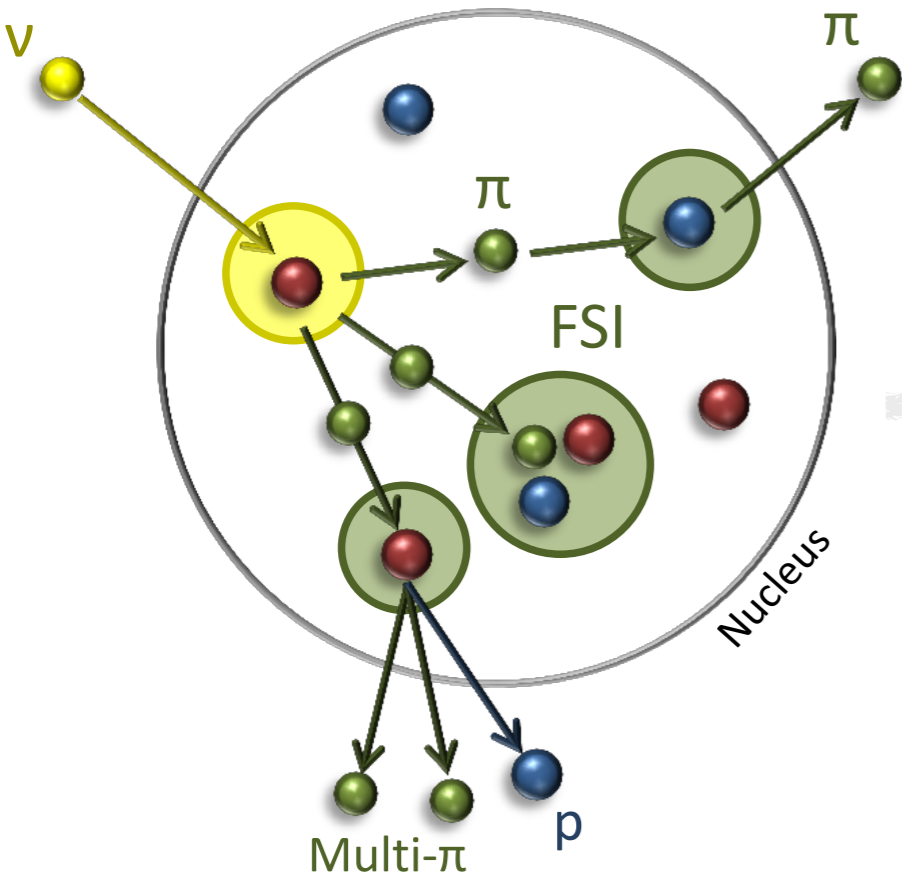
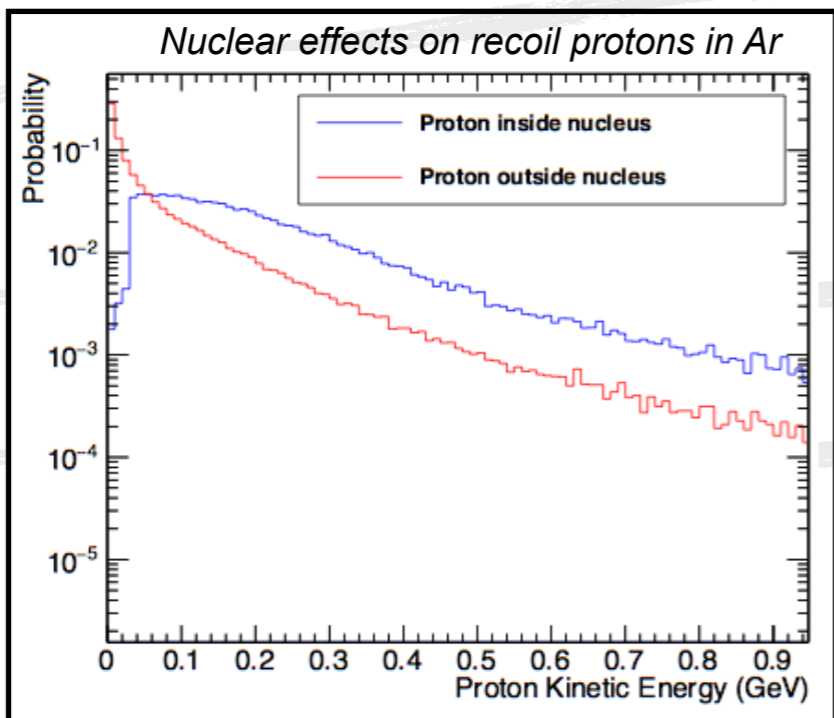


Need for new hadron scattering measurements

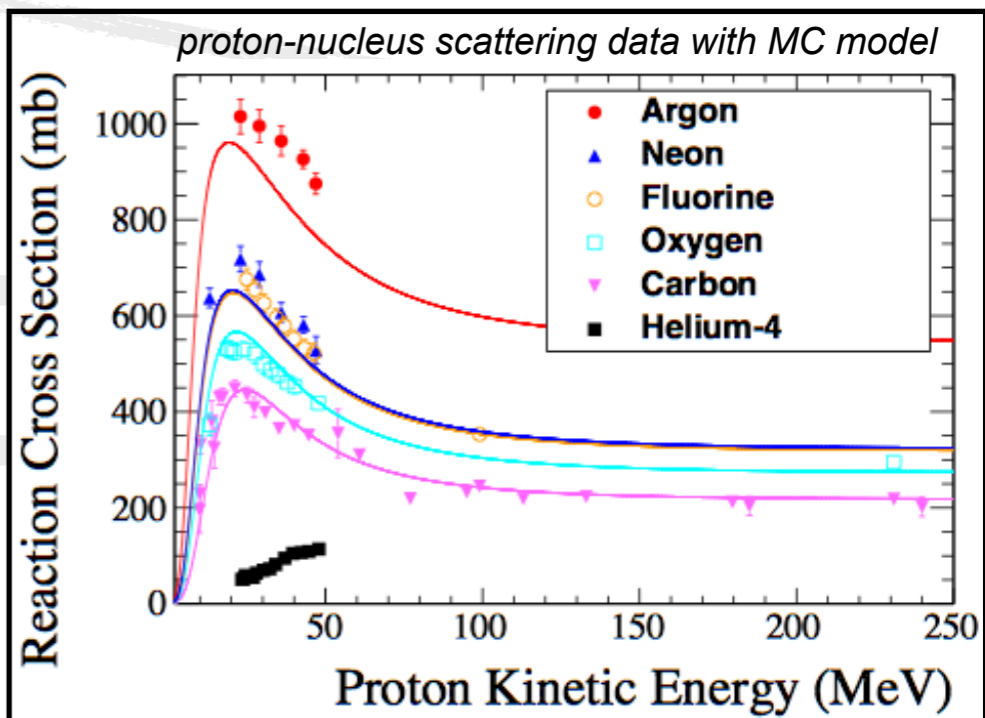


- Neutrino event reconstruction relies on observing final state particles
 - Significantly affected by hadronic scattering within nuclei
- **Very few measurements of proton scattering exist!**
- New measurements essential for constraining crucial part of interaction models

protons lose large fraction of energy in hadronic scattering within Ar nucleus



Almost no data on Ar above 50 MeV!



What beam characteristics are desirable?

- Definitely want:
 - good particle flux at low momentum
 - the plot on p.1 goes up to ~ 0.73 GeV/c, so desired region is below that
 - high proton fraction (maybe tunable?)
 - TOF (or other) PID systems suitable for low momentum
 - clean (low dust) environment and space to erect a clean tent
- Stretch goal:
 - Tagged photon beam?
 - allow π^0 measurements via Primakoff effect
 - More work needed to develop this

