



Conclusions

- *SaRoMaN* is capable of accurately reconstructing ν_μ CCQE events.
- It is a work in progress, and with updated algorithms it can be used to perform more accurate simulations of *nuSTORM*.

Introduction

- *nuSTORM* is a proposed facility capable of producing a neutrino beam at $\sim 3.8\text{GeV}$ with well-known flavour composition.
- At these energies quasi-elastic (QE) interactions dominate- *nuSTORM* will produce more accurate neutrino cross-sections for QE than currently available.
- Detector geometry consists of a Totally Active Scintillating Detector (TASD) and a Magnetised Iron Neutrino Detector (MIND) array.

Aims

- Project goal was to use *SaRoMaN* - (Simulation and Reconstruction of Muons and Neutrinos) to simulate and reconstruct ν_μ CCQE events.
- Accuracy of reconstructed momenta used as a figure of merit.

Results

- Reconstructed energy and momenta found to be accurate in the TASD but impeded by a detector geometry error in MIND.
- Momentum pull plot and χ^2 distribution imply accurate results given corrected geometry.

