

# ProtoDUNE-SP Calorimetry Update

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**ProtoDUNE Analysis Meeting**

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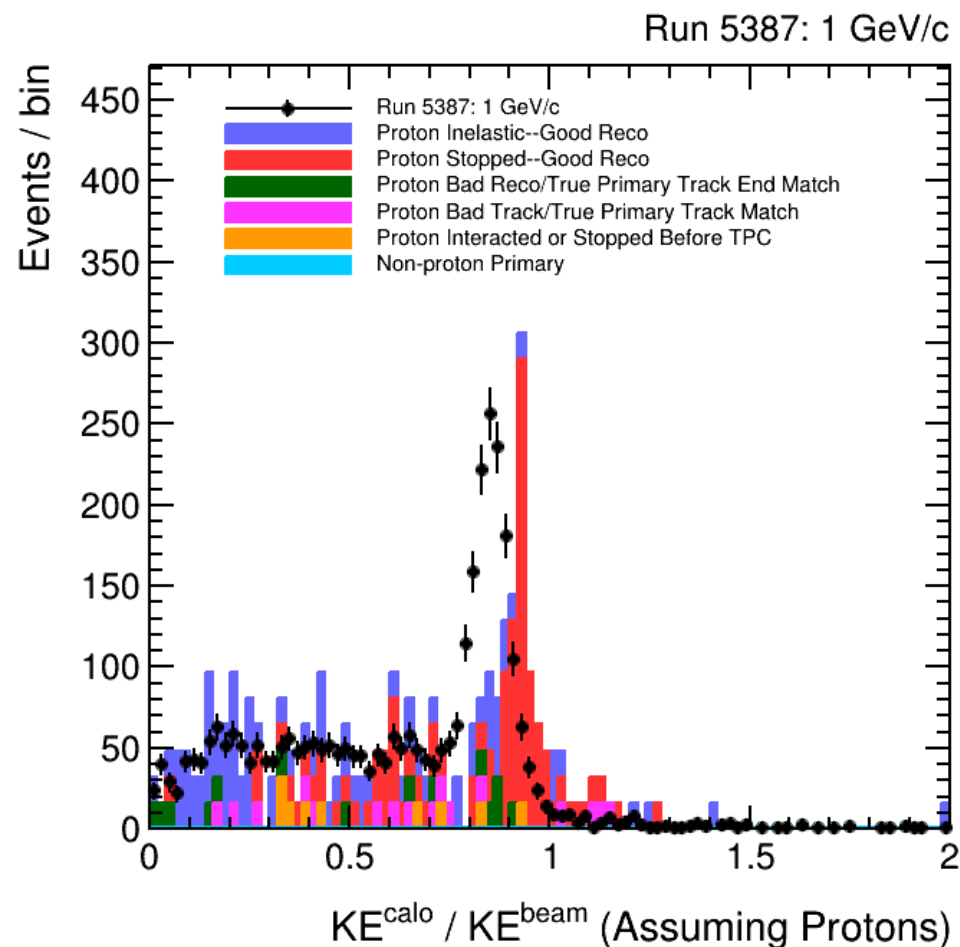


# Introduction

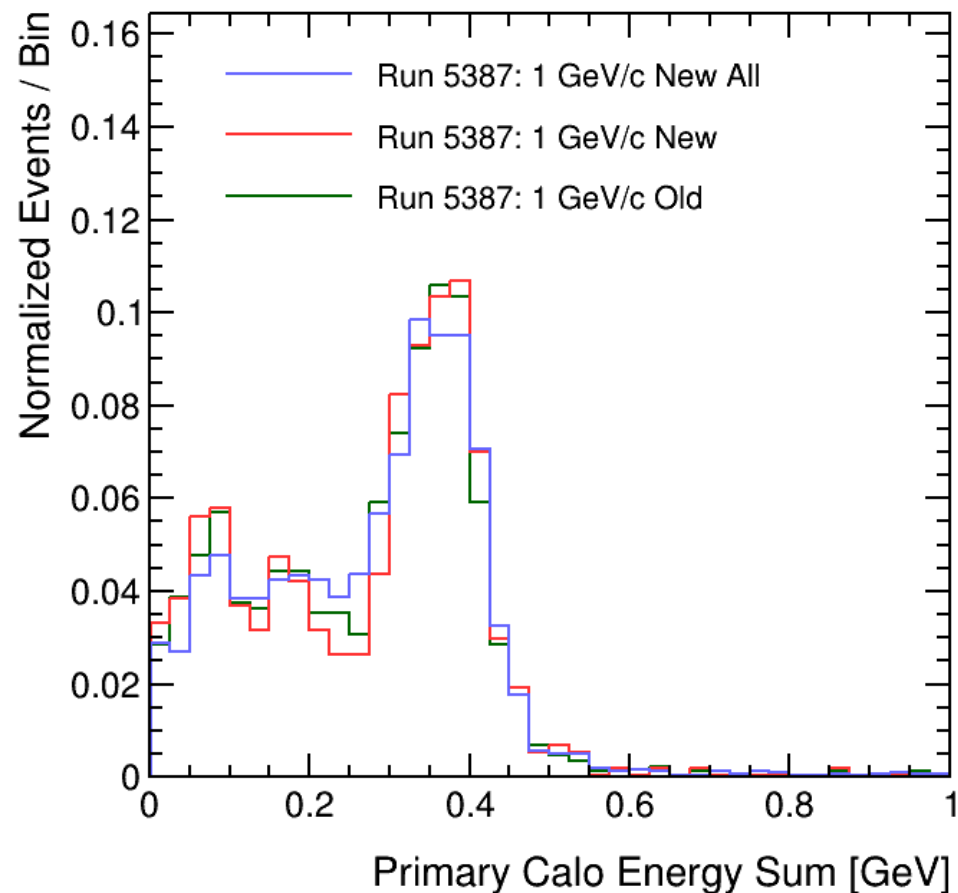
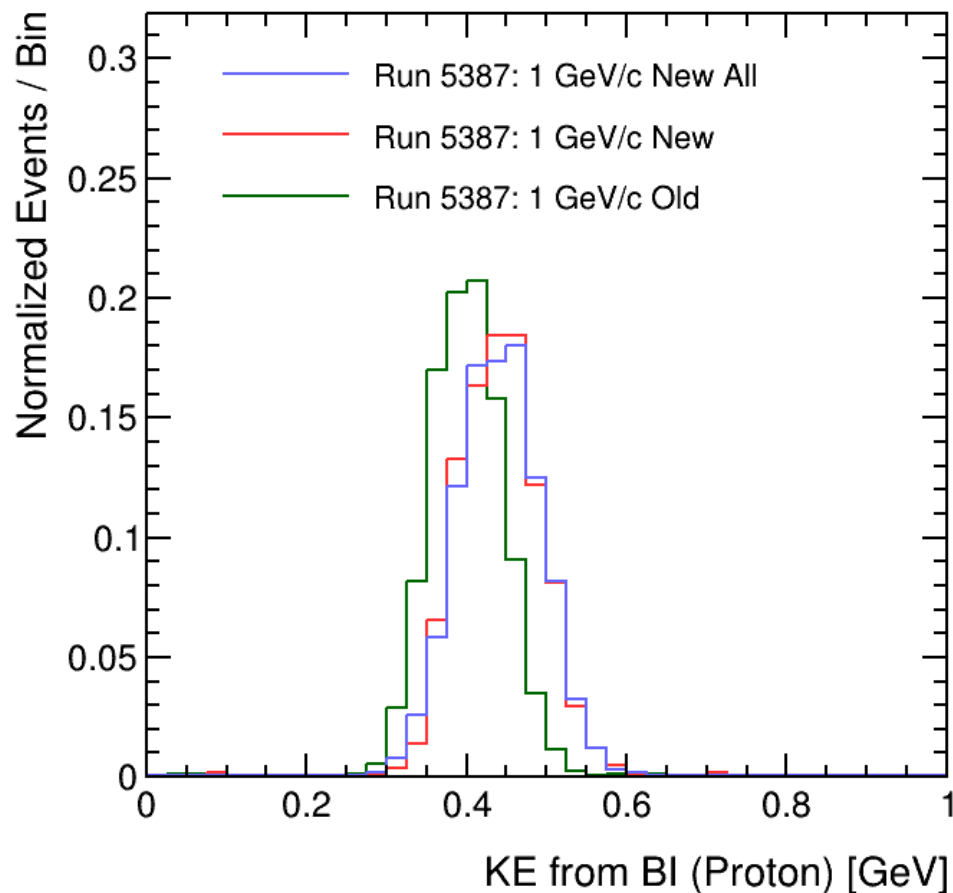
- **After updating beamline utilities, looking into calorimetry again**
- **Want to look at outliers**
- **First checking how things look with new beamline calibration and selection**

# Calorimetry Ratio to Beam

- Don't remember the data and MC disagreeing so much before
- Have to compare old and new data
- Changed:
  - Updated beamline Info:
    - <5% shift up in momentum
    - Updated selection
  - More data than before: all data in run now



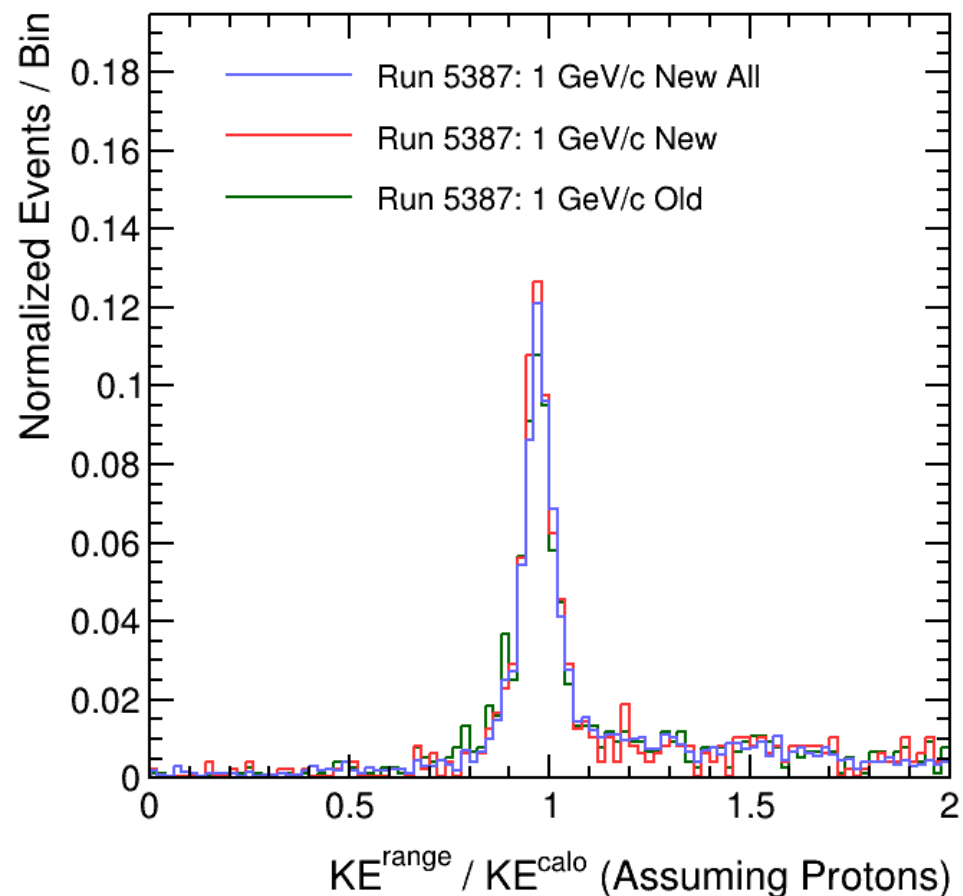
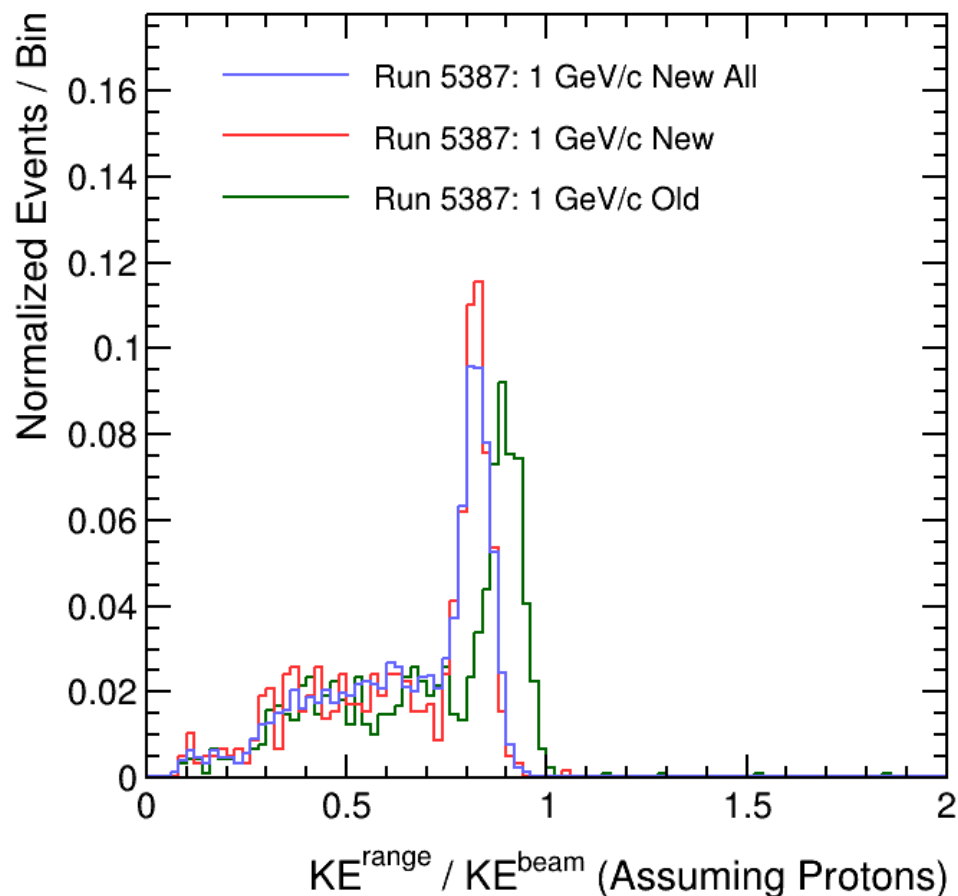
# Run 5387 Proton KE



**Beam energy changed as expected**

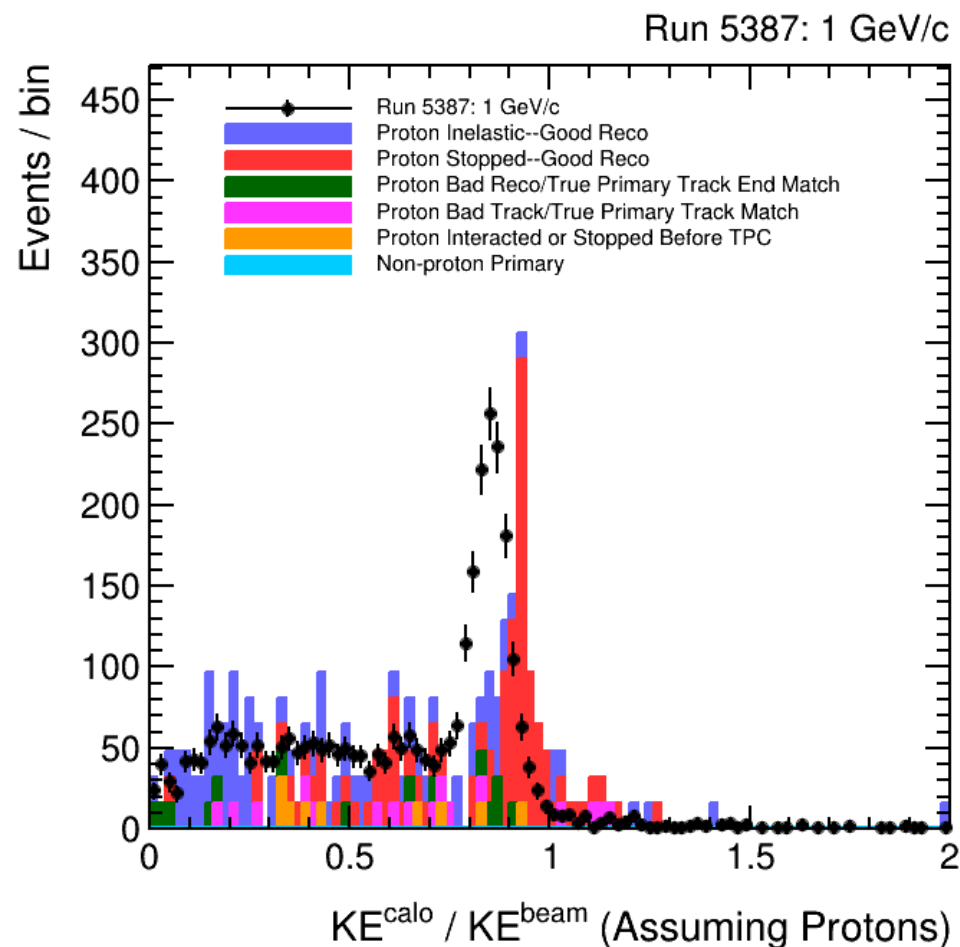
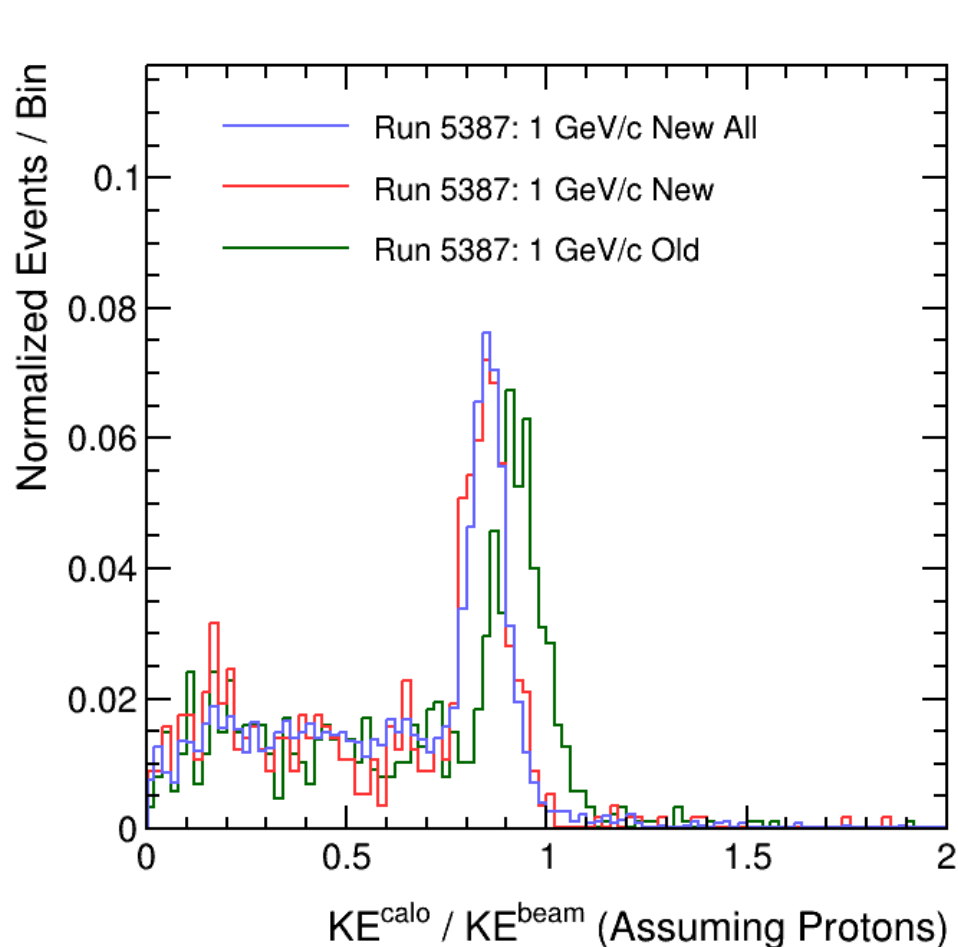
**Unclear if calorimetry changed**

# Run 5387 Proton KE



**Looks like beam changed; tracking and calo didn't**

# Run 5387 Proton KE



**Data shift seems to be due to the beam calibration**

# Conclusions & Next Steps

- **Understand KE ratio changes due to beamline calibration update**
- **Data & MC difference worse after beamline calibration**
- **Now move on to looking at events in tails & muons**
  - **Will have more 1 GeV MC in the next few days**