

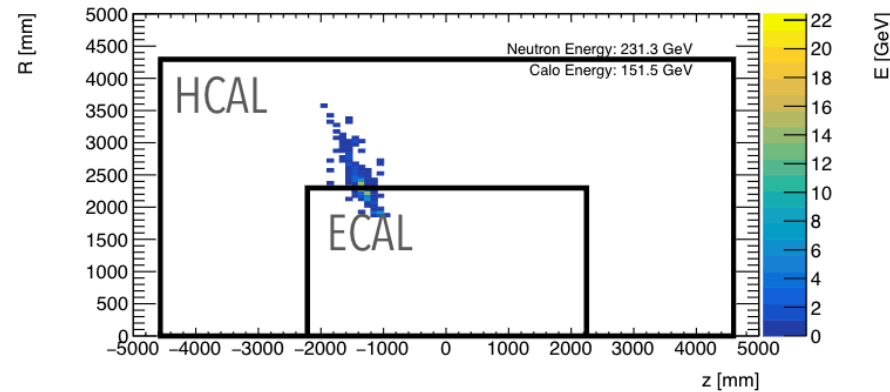


Brief Neutron Updates

Jun 6 2025

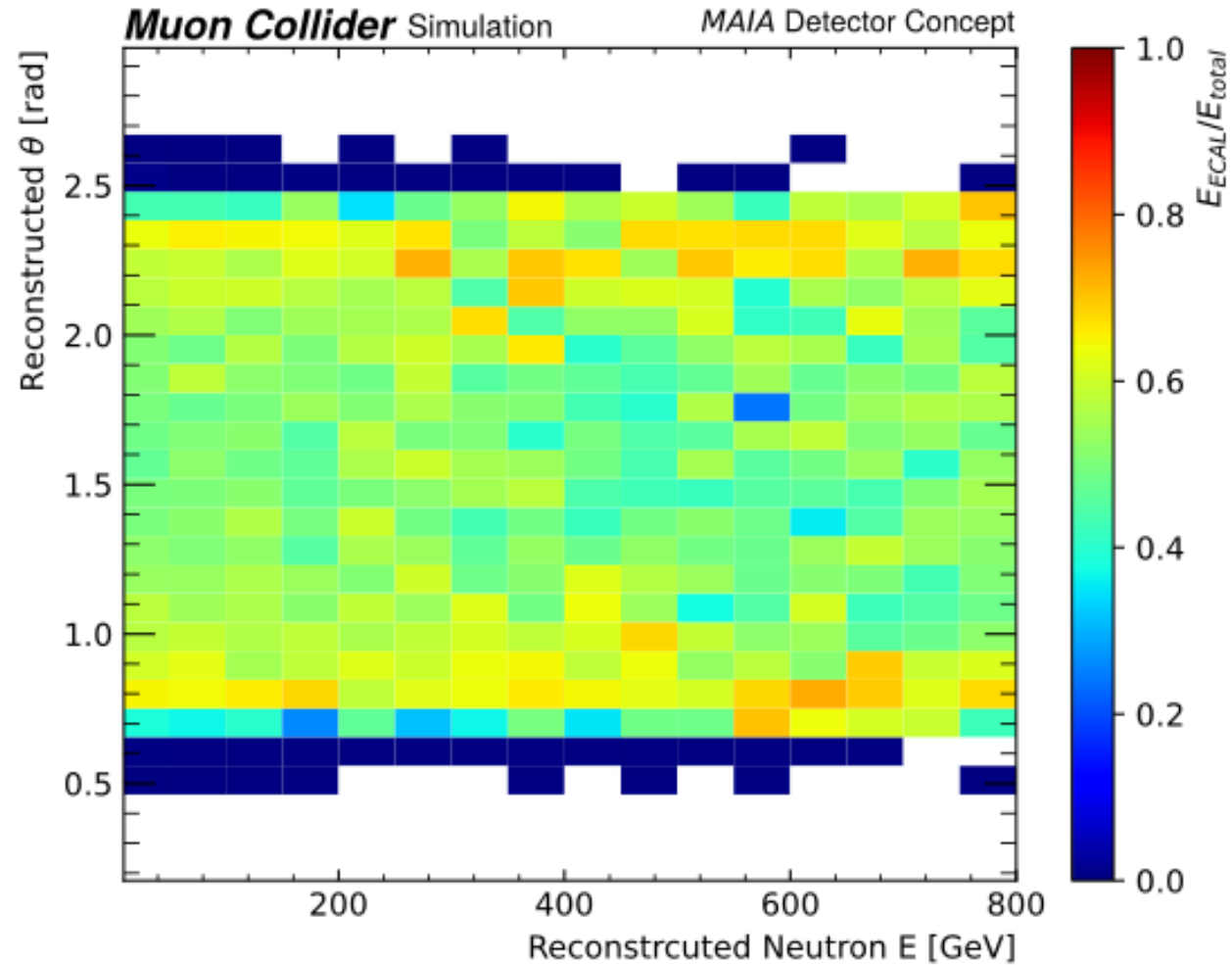
Overview

- Following Tova's studies of ECAL contribution to neutron energy:

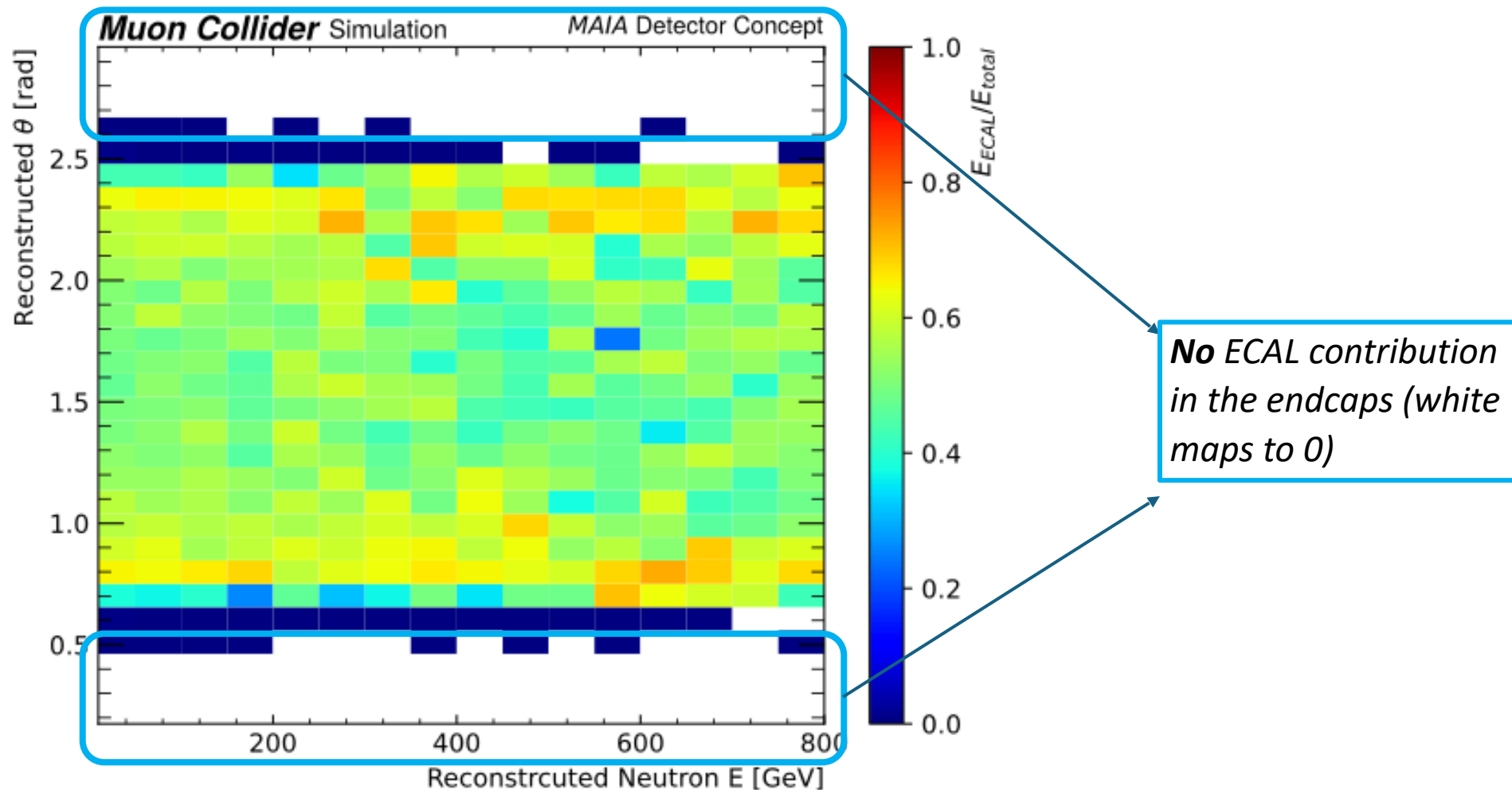


- Included ECAL hits in energy summing reconstruction strategy
 - Removed bimodal behavior in barrel but not in endcap
- Looked at ECAL fraction as a function of E and theta
- Also examined azimuthal distribution
- All for **no-BIB** samples

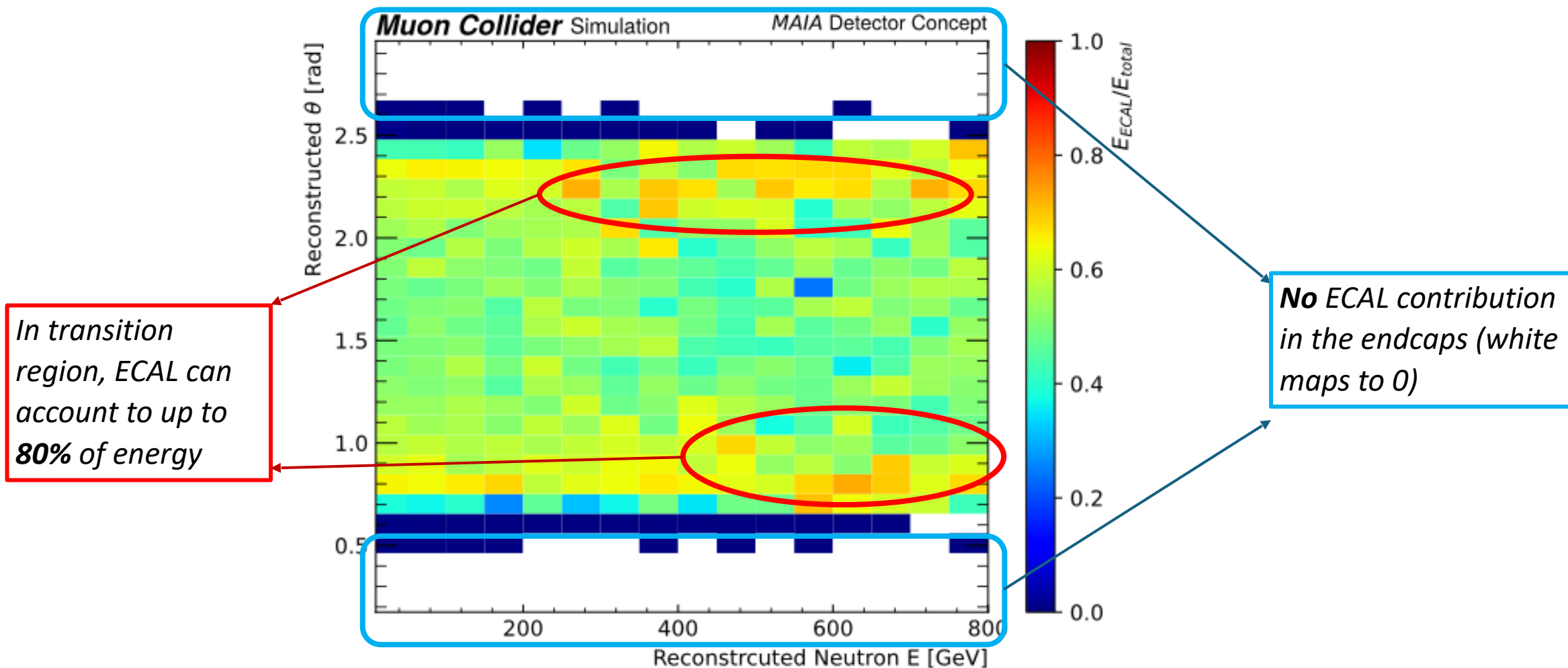
ECAL Fraction against E, theta



ECAL Fraction against E, theta

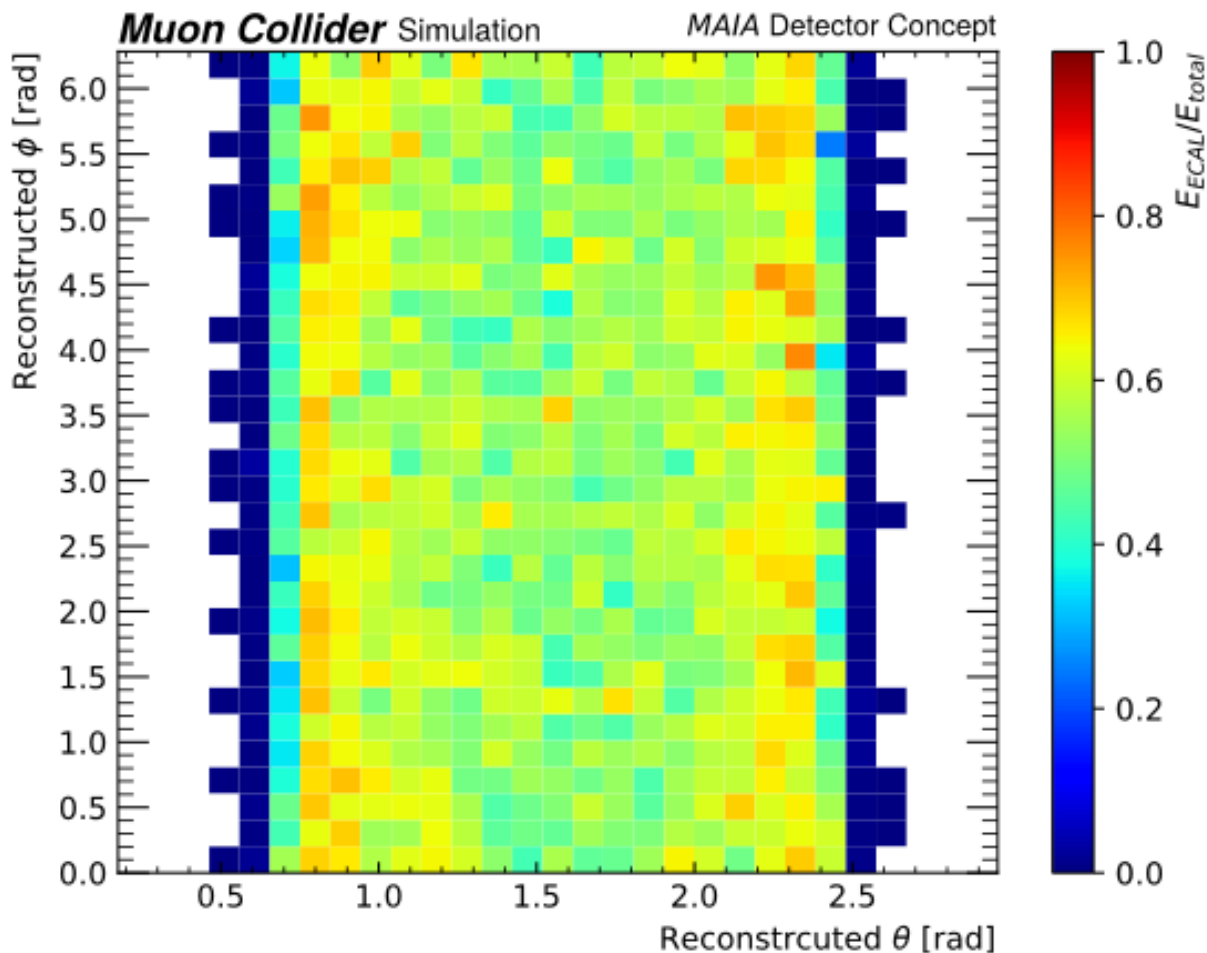


ECAL Fraction against E, theta



ECAL Fraction against theta, phi

No evidence of
unexpected
azimuthal
dependence



*All angular dependence is
the endcap-transition-barrel
discrepancy seen in other
response plots – and
indeed, ECAL fraction
manifests as the “shadow”
of the solenoid geometry*

Possible explanations

- Separate calibration needed for ECAL and HCAL contributions?
- Several overlaps found in geometry—energy non-conservation??
- Bug somewhere in the digi?
- Once overlaps are resolved, will repeat resolution studies with new samples