

# MUONS FROM CASCADES

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## MOTIVATION

- Cascade directionality is difficult to constrain
- Muons produced in cascade events can help improve cascade directionality reconstruction to around  $1^\circ$

## METHODS

- Force electron neutrino-proton collisions in PYTHIA 8
- Take secondary particles produced (i.e. pions and kaons) in these interactions and feed them into GEANT 4

