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Muon Tomography to Map Queen Maeve's Cairn VICTOR BRADLEY, SAMUEL CANO, ALAN CHAVEZ, MUHAMMED MOOSAJEE, CRISTOBAL MORENO, KATRINA WEBB, Texas Tech University, HEP MUON TOMOGRAPHY TEAM — Queen Maeves cairn in northwestern Ireland, a large man-made stone Neolithic mound, is one of the largest unexcavated cairns in Europe. As such, there is strong motivation to non-invasively map its internal structure. We are developing a muon telescope specifically for this purpose. Muons are partially absorbed by the stone and soil in the cairn but pass through voids less impeded, granting us a view inside the structure. Monte-Carlo simulations are used to create a comparative baseline to real-world data, as well as various machine learning approaches to enhance the detector performance.

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