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Using Pulse Shape Discrimination to Increase the Range of Particle Identification in the FAUST Array MATTHEW CHAPMAN, Texas A&M Cyclotron Institute — Heavy-ion collisions are an important probe of the nuclear Equation of State, however being able to isotopically identify light charged particles (LCP) along with a broad range of heavier intermediate mass fragments (IMF) in a compact detector presents its own set of challenges. The identification of LCPs and lighter IMFs can be achieved via a pulse shape discrimination (PSD) technique using the FAUST CsI(Tl) detectors. This technique can be combined with the more traditional $\Delta E - E$ technique to widen the range of isotopic particle identification of the heavier IMFs. The PSD technique involves nearly full waveform digitization and machine learning for a significant range of isotopic identification of LCPs and light IMFs. Simulated data from Geant4 will be presented along with results from recent online tests.

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