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Nuclear modification factor of neutral pions in p+A, d+Au and 3He+Au collisions in PHENIX NIVEDITHA RAM, Stony Brook University, PHENIX COLLABORATION — The suppression of neutral pion production in Au+Au collisions at RHIC, and lack of suppression in d+Au collisions are evidence a QGP was formed (in Au-Au collisions) in which hard scattered partons-in a final state effect-lose energy. Initial state, or "cold nuclear matter" effects, including the Cronin-effect, were expected to dominate very asymmetric (small on large) collisions. Recently, however, collectivity has been observed in p/d/He+A collisions, consistent with the formation of QGP droplets. While this does not necessarily imply hadron suppression, as in central Au+Au collisions, earlier d+Au results suggested exactly that, along with a surprising enhancement in peripheral d+Au. In this talk we will present the results of a systematic study of the neutral pion nuclear modification factor in p+Al, p+Au, 3He+Au along with a re-analysis of the d+Au data and compare them to previously published data and theoretical calculations.

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