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Isoscaling, SMM and the symmetry energy: connecting the dots
P. MARINI, S.J. YENNELLO, A. BOTVINA, A. BONASERA, Z. KOHLEY, L.W. MAY, R. TRIPATHI, S. WUENSCHEL, Texas A&M University — Nuclear symmetry energy plays a central role in both nuclear physics and astrophysics and is currently a topic of significant theoretical and experimental studies. Several observables in heavy ion collisions are known to be affected by the symmetry energy (Esym), but quantitative information is difficult to extract, due to secondary decay of excited primary fragments, which can distort signatures contained in primary fragment observables. The Statistical Multifragmentation Model (SMM) has been widely used for interpreting experimental data on multiple fragment production in different nuclear reactions and to extract information on the symmetry energy starting from secondary fragments. Isoscaling has been observed for the secondary fragments from ^{78,86}Kr+^{58,64}Ni at 35AMeV reactions, collected with NIMROD. A comparison to models is now needed to constrain Esym. In this contribution we will analyze SMM, paying special attention to the effects of the secondary de-excitation on the value of observables which can be extracted from experimental data and their correlation with input symmetry energy value in the model. Among the observables we will focus on the isoscaling parameter to figure out how the symmetry energy values, which can be extracted from it for both hot and cold fragments, are related.

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