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Modified statistical model for alpha production in proton+Ag reactions at intermediate energies MOHAMMAD S. SABRA, USRA Science and Technology Institute, Huntsville, AL 35805 — Energy spectra measurements of alpha-particles emitted from an Ag target bombarded with 210, 300, and 480 MeV protons are analyzed by using different intra-nuclear cascade models implemented within Geant4 code plus the Statistical Model with Final State Interaction SMFSI. A key difference between SMFSI and other statistical evaporation models is that SMFSI allows fragments to be emitted in all possible states, ground states, excited states, as well as in the continuum, and hence fragments might be unstable while detected (similar to fission-like process). The SMFSI model reproduced the evaporative component of the energy spectra of alpha-particles reasonably well compared to the default evaporation models used in Geant4.

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