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Reaction dynamics in the $^{58}\text{Ni}+^{58}\text{Ni}$ system at intermediate energies

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The $^{58}\text{Ni}+^{58}\text{Ni}$ reaction was measured using the INDRA-FAZIA apparatus at three different energies: 32, 52, and 74 AMeV. In peripheral and semi-peripheral collisions, two main distinct reaction channels, one associated with the QP remnant and the other with the QP breakup channel, were identified. The analysis was conducted as a function of incident energy and collision centrality. In the breakup channel, the statistical or dynamical origin of the fission fragments and their isospin content were investigated. In both channels, the characteristics of light charged particles and intermediate mass fragments were analysed. In particular, after carefully disentangling the midvelocity component from the evaporative emissions, their properties were compared. Finally, the results were compared with the predictions of the AMD+GEMINI++ simulation.

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