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The FAZIA apparatus: status and perspectives

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FAZIA is a detector array designed to detect and identify charged fragments produced in heavy-ion collisions in the Fermi energy domain. It is the result of a R&D activity aimed at improving the (Z, A) identification capabilities, which are crucial for investigating the nuclear equation of state (EOS).

Since 2019, FAZIA has been performing experiments at GANIL, coupled with the INDRA array, to study reaction mechanisms at Fermi energies. The setup is particularly well-suited for investigating isospin transport phenomena and has already produced significant results.

Looking ahead, the FAZIA collaboration plans to extend its research to investigate the EOS in density regions above the nuclear saturation. To achieve this, the collaboration is exploring new programs at high-energy facilities such as FRIB and RAON, which will utilize both stable and radioactive beams. It is expected that these future studies will provide more stringent constraints on EOS parameters in density regions where experimental data are scarce.

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