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ACTAR TPC: a novel detection system for nuclear physics experiments [INVITED]

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The Active Target and Time Projection Chamber (ACTAR TPC) is an ambitious European project whose goal is to design and construct a high-luminosity gas-filled detector to study reactions and decays of rare isotopes. The core detection system consists of a micro-pattern gaseous detector coupled to a highly pixelated pad plane with a pitch of only 2x2 mm2. Both the channel density (25 channels/cm2) and total number of channels (16384) are the highest that have been achieved by any nuclear physics detector to date. In this talk, I will provide an overview of the project, present new results from a recent commissioning experiment and describe the day one physics programs for ACTAR TPC when it goes online at the GANIL laboratory in France in 2018.

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