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Probing Unstable Nuclei with low-energy Antiprotons - Status and Progress of the PUMA experiment

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The antiProton Unstable Matter Annihilation (PUMA) experiment aims to use low-energy antiprotons as a probe to investigate the proton-to-neutron ratio at the tail of nuclear density of unstable nuclei. Since no existing facility provides a collider of low-energy antiprotons and low-energy radioactive ions, PUMA proposes to bridge this gap by storing up to one billion antiprotons in a portable Penning trap, to be transferred from the Antimatter Factory to ISOLDE.

This involves significant technological challenges and requires theoretical understanding of the annihilation. In this contribution, I present an overview of the PUMA experiment, its current status, and progress toward the first physics measurements. Particular emphasis will be placed on the progress at the Antiproton Decelerator (AD) and the ongoing construction of the new RC-6 and RC-7 beamlines at ISOLDE.

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