

EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH

Letter of Intent to the ISOLDE and Neutron Time-of-Flight Committee

PUMA: antiProton Unstable Matter Annihilation

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With the present cover letter, we confirm our intention to propose experiments at ISOLDE with the PUMA apparatus when developed, with the intention to study the evolution of neutron skins with isospin, as well as proton and neutron halos in exotic nuclei by use of trapped antiprotons.

The INTC has already been informed about PUMA via a Letter of Intent [SPSC-I-247] and a Memorandum [INTC-M-018], submitted in December 2017 and June 2018, respectively. Following a call for proposals at the AD/ELENA [CERN-SPSC-2019-028 / SPSC-G-035], a full proposal for PUMA was recently submitted to the SPSC [CERN-SPSC-2019-033 / SPSC-P-361] and attached to the present cover letter. This proposal contains up-to-date information regarding the plans and status of PUMA, in particular plans at ISOLDE.

Requested shifts: each experiment at ISOLDE with the PUMA setup will be submitted to the INTC. At this stage no beam time is requested. At this stage of the project, we have identified ten first physics cases, leading to an estimate of about 100 shifts (split into 10 runs over 4 years).

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