

# SÉMINAIRE du PÔLE THÉORIE



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### Pionisation : a method to study nuclear surface

An ambitious CERN experiment – PUMA – is going to form anti-protonic atoms of unstable nuclei. The purpose is to detect -mesonic decays of such atoms and extract the neutron excess at nuclear surfaces : the neutron haloes - of  $N \gg Z$  nuclei. In this talk a method to analyse such experiments is discussed. Studies of old experiments with standard anti-protonic atoms indicate that pionisation experiments may offer rich data. In addition to neutron haloes one could learn effects of short- range p-n correlations , possibly learn existence or non-existence of type structures at distant nuclear radii [1]. All depends on our control of nucleon-antinucleon interactions , and naturally on the precision of experiment.

[1] S. Wycech and K. Piscichia, Pys. Rev. C **108**, 014313 (2023).

*Thursday 5 October 2023, 14h00*  
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