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Neutron skin

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Topic of neutron skin is interesting aspect of nuclear physics. Experiments like NA61/SHINE, PREX II and others may give us data for deeper understanding of this area of physics, helping to improve the theory. Different elements of the theory, like slope parameter, can be explored better by both - simulations and experiment.
In my talk I would like to focus on the theoretical results related to collision of nuclei+nuclei (for Pb-Pb,Sn-Sn, Dy-Dy) or nucleus+particle (Pb+p, Pb+antiproton) at high and very high energy collisions. Different quantities like ratio of numbers of positive and negative pions (as a function of Feynmann variable) can show some aspects of this topic. Different calculations for both types: skin and halo, would be presented.

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References:

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2. “$\pi+ - \pi-$ asymmetry and the neutron skin in heavy nuclei”, Antoni Szczurek(2004)
3. “Ab initio predictions link the neutron skin of 208Pb to nuclear forces”, Baishan Hu et al. (2022)
4. “Neutron skin systematics from microscopic equations of state”, Francesca Sammarruca (2022)
5. „Neutron skin calculations for Pb+Pb, proton+Pb, antiproton+Pb at p~1AGeV. (and higher momentum) collisions.”, Michal Palczewski , Andrzej Wieloch (2024)

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