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Polarization REsearch for Fusion Experiments and Reactors - The PREFER collaboration: purposes and present status

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The PREFER (Polarization REsearch for Fusion Experiments and Reactors) collaboration aims to address the know-hows in different fields and techniques to the challenging bet on fusion with polarized fuel.

The efforts are focused on a variety of duties and purposes, which are under the responsibility of different institutes and research groups (presented here by the representative of the research center in the author list). Starting from still open questions in the fusion reaction physics, as an example the study of d-d spin dependent cross sections - Vasilyev, till the production of polarized ion acceleration by laser - Büscher, there are many connections between the research groups involved. The collaboration is facing also the production of nuclear polarized molecules, recombined by polarized atomic beam - Engels, and its condensation and transport - G. Ciullo/ M. Statera.

Other chances of production are investigated: spin separation of molecules, in pMBS (polarized Molecule Beam Sources) - Toporkov) and from photodissociation - Rakitizis.

The status of the different fields under investigation and the connections between the topics and the different research groups will be provided.

Summary

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