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Searching for neutron Electric Dipole Moment and dark matter candidates at the Paul Scherrer Institute

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The quest for the neutron Electric Dipole Moment (neutron EDM) started more than sixty years ago and is still one of the most important tasks faced by experimental physicists. The reason is that a non-zero value of this observable would violate both the parity symmetry and the time-reversal symmetry. Such a symmetry violation may help us to explain why the Universe is essentially made of matter and not of antimatter. The latest results of the neutron EDM measurement at PSI, where the highest sensitivity among all neutron EDM measurements made to date has been achieved, will be presented along with prospects for further development of the experiment. Furthermore, the measurement method used allows the search for dark matter candidates, i.e. mirror neutrons and very light axions - the results of these measurements will also be briefly presented.

Submitted on behalf of a Collaboration?

Yes

Author: Prof. ZEJMA, Jacek (Jagiellonian University in Kraków, Poland)

Presenter: Prof. ZEJMA, Jacek (Jagiellonian University in Kraków, Poland)

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