

Fundamental Physics with Low Energy Neutrons

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Abstract

Several properties of the neutron enable a broad spectrum of precision tests of physics within and beyond the Standard Model that would be difficult, impossible, or orthogonal with experiments on other elementary particles. Advances in techniques for neutron production, manipulation, and detection have promoted this field into an era of precision measurements. The state of current and proposed neutron facilities, techniques, and experiments is reviewed, as are the prospects for studies of fundamental physics in current and future experiments.

Keywords: fundamental symmetries, cold neutrons, ultracold neutrons

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1. Introduction

Here are two articles every neutron physicist should read: [1, 2].

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2. Experimental techniques in neutron physics
3. Neutron electric dipole moment
4. Neutron β -decay
5. Hadronic interactions
6. Quantum interference
7. Conclusions and future prospects

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- [2] B. Plaster *et al.*, Measurements of the neutron β -asymmetry parameter A_0 with ultracold neutrons, *Physical Review C* 86 (2012) 055501. <http://dx.doi.org/http://dx.doi.org/10.1103/PhysRevC.86.055501> doi:<http://dx.doi.org/10.1103/PhysRevC.86.055501>.