

Special Issue

Detecting the Invisible: Experimental Advances in WISP Dark Matter Searches

Message from the Guest Editor

We are pleased to invite you to contribute to this Special Issue, “Detecting the Invisible: Experimental Advances in WISP Dark Matter Searches”. The nature of dark matter remains one of the greatest open questions in physics. Among the leading candidates are axions and axion-like particles, which could simultaneously explain the strong CP problem and the dark matter content of the Universe. Recent progress in helioscopes, resonant haloscopes, broadband detectors, and quantum-enhanced sensing has significantly expanded our ability to probe previously inaccessible regions of parameter space. These developments are driving a new generation of highly sensitive experiments capable of testing fundamental symmetry principles at unprecedented precision. This Special Issue aims to highlight recent experimental progress in Weakly Interacting Slim Particles (WISP) dark matter detection. Contributions are invited that focus on new detection concepts, high-Q resonators, cryogenic systems, low-noise electronics, quantum sensing technologies, and advanced data analysis techniques such as machine learning and signal extraction methods.

Guest Editor

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Message from the Editor-in-Chief

Symmetry is ultimately the most important concept in natural sciences. It is not surprising then that very basic and fundamental research achievements are related to symmetry. For instance, the Nobel Prize in Physics 1979 (Glashow, Salam, Weinberg) was received for a unified symmetry description of electromagnetic and weak interactions, while the Nobel Prize in Physics 2008 (Nambu, Kobayashi, Maskawa) was received for the discovery of the mechanism of spontaneous breaking of symmetry, including CP symmetry. Our journal is named *Symmetry* and it manifests its fundamental role in nature.

Editor-in-Chief

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