

Physics-Informed Neural-Network Modeling of Axion–Photon Conversion in Structured Electromagnetic Fields

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The presentation concerns a physics-informed neural-network framework for solving coupled axion–Maxwell equations in inhomogeneous electromagnetic backgrounds. In particular, it considers numerical modelling of axion–photon conversion in resonant and non-uniform field configurations, with potential applications to haloscopes, helioscopes, and quantum-sensor-based axion detection.

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Session Classification : Plenary Session