

# LISA and its synergy with particle physics colliders

*Thursday 13 March 2025 10:45 (45 minutes)*

One of the primary objectives of the LISA mission is to measure and characterize the stochastic gravitational-wave background (SGWB). Achieving this goal will allow LISA to explore various domains, including astrophysics, cosmology, and particle physics. This talk focuses on the latter, specifically on physics beyond the Standard Model that involves strong first-order phase transitions. We demonstrate that LISA holds significant potential for advancing particle physics. Indeed, by searching and reconstructing (or imposing upper bounds on) the SGWB from first-order phase transitions, LISA can accurately constrain the parameter space of particle physics models, in synergy with current and future colliders.

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**Session Classification:** Invited talk