

## Atomic parity violation theory: status, challenges, outlook

*Wednesday, 24 September 2025 16:00 (30 minutes)*

Studies of fundamental symmetries violations in atoms and molecules provide some of the most confronting tests of the Standard Model and sensitive searches for new physics beyond. In this talk, I will focus on atomic parity violation and give the current status and key challenges of the theory. I will also discuss how atoms may be used to deduce improved nuclear physics properties, essential for reducing theory uncertainties and increasing the discovery potential of current and future experiments.

**Primary author:** GINGES, Jacinda (The University of Queensland)

**Presenter:** GINGES, Jacinda (The University of Queensland)

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