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Primordial fossils as a probe of parity violation

Monday, 11 December 2023 17:20 (10 minutes)

The primordial vorticity and gravity wave leave anisotropic imprints in the large-scale structure, known as the primordial fossils. The primordial vector and tensor fossils are directly sensitive to parity violations in the early Universe. I will present a new method to generate parity violating initial conditions for cosmological simulations and show that the tidal estimators can separate the parity-odd signal from the nonlinearities generated in the cosmic evolution. This provides a new way to constrain parity violating signals using the large-scale structure traced by galaxies.

Primary author: ZHU, Hongming (NAOC)

Co-author: Prof. PEN, Ue-Li (ASIAA)

Presenter: ZHU, Hongming (NAOC)

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