

Seminarium Astrofizyczne
wtorek 12.03.2024 godz. 12:30
ul. Pasteura 7, sala 404

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On the origins of CMB anomalies and testing the unitary quantum gravitational physics

In this talk, I will present compelling evidence suggesting a statistical violation of parity symmetry (a discrete symmetry that is separate from isotropy) in the Cosmic Microwave Background (CMB) map, measured through two-point temperature correlations. I will show that most of the CMB anomalies at large angular scales originated from the parity asymmetry feature of the CMB. I will present how a new theory of inflationary quantum fluctuations that emerges from unitary quantum gravitational physics can successfully explain the parity asymmetric CMB with 650 times higher probability than the standard inflationary theory with near-scale invariant power spectra. Finally, I will conclude with comments on the importance of these results for future observations of large-scale structures.

Serdecznie zapraszam,
Prasad Sawant, on behalf of the SOC