Seventeenth Marcel Grossmann Meeting



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Can the Topology of the Universe Affect the CMB?

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Cosmic Microwave Background (CMB) observations traditionally assume an isotropic and homogeneous infinite Universe. However, a growing number of large-scale anomalies and dipoles in the literature suggest the need to revisit these assumptions. A physically well-motivated explanation for these anomalies is the impact of the Universe's topology. Even in a flat Universe, the topology can introduce anisotropic correlations in the CMB. In this talk, I will present the recent and ongoing work of the COMPACT collaboration on the observational effects of the Universe's topology. I will discuss the specific, testable predictions for the CMB, focusing on how advancements in data analysis and future polarization measurements can reveal the global shape of the Universe.

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