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Anomalies in the CMB from a cosmic bounce¹ DIMITRIOS KRANAS, IVAN AGULLO, Department of Physics and Astronomy, Louisiana State University, Baton Rouge, LA 70803, U.S.A., VIJAYAKUMAR SREENATH, Department of Physics, National Institute of Technology Karnataka, Surathkal, Mangalore 575025, India. — We propose a cosmological model that can provide a common origin to several of the anomalous features observed at large angular scales in the cosmic microwave background (CMB). More concretely, we show that a power suppression, a dipolar asymmetry, and a preference for odd-parity correlations, with amplitude and scale dependence in consonance with observations, are expected from this scenario. The model also alleviates the tension in the lensing amplitude. These features originate from the indirect effect that non-Gaussian correlations between CMB modes and super-horizon wavelengths induce in the power spectrum. In the model we propose, a cosmic bounce precedes the inflationary era. Adopting a phenomenological approach for the profile of the bounce, we keep our analysis as general as possible but we complement it by mentioning well-established theories where our model can be materialized.

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