



High Energy Physics - Phenomenology

Statistical Anisotropy and the Vector Curvaton Paradigm

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The vector curvaton paradigm is reviewed. The mechanism allows a massive vector boson field to contribute to or even generate the curvature perturbation in the Universe. Contribution of vector bosons is likely to generate statistical anisotropy in the spectrum and bispectrum of the curvature perturbation, which will soon be probed observationally. Two specific models for the generation of superhorizon spectra for the components of an Abelian vector field are analysed. Emphasis is put on the observational signatures of the models when the vector fields play the role of vector curvatons. If future observations support the vector curvaton mechanism this will open a window into the gauge field content of theories beyond the standard model.

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