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Mr. WAGSTAFF, Jacques (Lancaster University): A Compelling Vector Curvaton Model without Instabilities

Tuesday, 14 September 2010 15:45 (15 minutes)

A vector curvaton model with a Maxwell kinetic term and varying kinetic function and mass during inflation is studied. It is shown that, if light until the end of inflation, the vector field can generate statistical anisotropy in the curvature perturbation spectrum and bispectrum, with the latter being predominantly anisotropic. If by the end of inflation the vector field becomes heavy, then particle production is isotropic and the vector curvaton can alone generate the curvature perturbation. The model does not suffer from instabilities such as ghosts and is the only concrete model, to date, which can produce the curvature perturbation without direct involvement of fundamental scalar fields.

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