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## Effects of exotic solid-like matter in the post-inflationary universe

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Inflationary models with solid described through a triplet of fields with homogeneous and isotropic properties are consistent with observations [1] and at the same time predict unique nonlinear properties of primordial perturbations [2]. A problematic feature is the possibility of superluminal propagation of perturbations, which considerably restricts the parameter space of studied models. Assuming constant pressure to energy ratio w, this superluminality is avoided for  $w \le (19-8\sqrt{7}) \approx -0.722$ , and the behavior of scalar, vector, and tensor perturbations considerably differs from the case with perfect fluid [3]. This illustrates possible challenges with comparing the observational data to models similar to solid inflation. In my talk, I plan to elaborate on distinctive features of solid-like matter models related to my latest research.

[1] S. Endlich et al., JCAP 10 (2013) 011, arXiv:1210.0569 [hep-th].

[2] P. Mészáros, JCAP 09 (2019) 048, arXiv:1905.03544 [gr-qc].

[3] P. Mészáros, arXiv:2302.14480 [gr-qc].

## Submitted on behalf of a Collaboration?

No

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