

## General Relativity and Quantum Cosmology

# de Sitter expansion with anisotropic fluid in Bianchi type-I space-time

Ozgur Akarsu, Can B. Kilinc

*(Submitted on 4 Jan 2010 (v1), last revised 25 Jan 2010 (this version, v2))*

Some features of the Bianchi type-I universes in the presence of a fluid that yields an anisotropic equation of state (EoS) parameter are discussed in the context of general relativity. The models that exhibit de Sitter volumetric expansion due to the constant effective energy density (the sum of the energy density of the fluid and the anisotropy energy density) are of particular interest. We also introduce two locally rotationally symmetric models, which exhibit de Sitter volumetric expansion in the presence of a hypothetical fluid that has been obtained by minimally altering the conventional vacuum energy. In the first model, the directional EoS parameter on the x axis is assumed to be -1, while the ones on the other axes and the energy density of the fluid are allowed to be functions of time. In the second model, the energy density of the fluid is assumed to be constant, while the directional EoS parameters are allowed to be functions of time.

Comments: 9 pages. Some corrections made in text and references in v2  
Subjects: **General Relativity and Quantum Cosmology (gr-qc)**  
Journal reference: Astrophysics and Space Science, 326 (2010) 315-322  
DOI: [10.1007/s10509-009-0254-9](https://doi.org/10.1007/s10509-009-0254-9)  
Cite as: **arXiv:1001.0550v2 [gr-qc]**

## Submission history

From: Özgür Akarsu [[view email](#)]**[v1]** Mon, 4 Jan 2010 18:20:56 GMT (28kb)**[v2]** Mon, 25 Jan 2010 17:40:50 GMT (28kb)*[Which authors of this paper are endorsers?](#)*Link back to: [arXiv](#), [form interface](#), [contact](#).

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