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Mathematical aspects of inflationary cosmology

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Abstract content

We show a global existence theorem for Gowdy symmetric spacetimes with a positive potential as a model for inflationary cosmology from string/M-theory. Also, asymptotic behaviour of the spacetimes is investigated. Asymptotically velocity terms dominated solutions near the initial singularity are constructed and the future asymptotic behaviour of the spacetimes is analysed. These results are support the validity of the BKL, cosmic no-hair and strong cosmic censorship conjectures.

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