

Topologically non-trivial configurations in the early Universe

Monday, 2 October 2017 15:10 (170)

We study formation and evolution of solitons within a model with two real scalar fields with the potential having a saddle point. The set of these configurations can be split into disjoint equivalence classes. We give a simple expression for the winding number of an arbitrary closed loop in the field space and discuss the evolution scenarios that change the winding number. These non-trivial field configurations lead to formation of the domain walls in the three-dimensional physical space. We also discuss possible observational consequences of the appearance these non-trivial field configurations.

Primary author(s) : Dr. KIRILLOV, Alexander (National Research Nuclear University MEPhI (Moscow Engineering Physics Institute), Yaroslavl State P.G. Demidov University); Prof. RUBIN, Sergey (National Research Nuclear University MEPhI (Moscow Engineering Physics Institute); N.I. Lobachevsky Institute of Mathematics and Mechanics, Kazan Federal University); Dr. GANI, Vakhid (National Research Nuclear University MEPhI (Moscow Engineering Physics Institute); Institute for Theoretical and Experimental Physics, National Research Centre Kurchatov Institute)

Presenter(s) : Dr. KIRILLOV, Alexander (National Research Nuclear University MEPhI (Moscow Engineering Physics Institute), Yaroslavl State P.G. Demidov University)

Session Classification : Poster session and coffee&reception