

Tachyonic dark energy model: dynamics and evolution

Rachan Rangdee^{1,2*} and Burin Gumjudpai²

¹ Department of Physics, Faculty of Science, Naresuan University, Phitsanulok, Thailand

² TPTP, The Institute for Fundamental Study (IF), Naresuan University, Phitsanulok, Thailand

* Corresponding author. Email: rachanra@nu.ac.th

ABSTRACT

Dynamics of dark energy models are widely studied in order to understand present acceleration of the universe. *Dirac-Born-Infeld* (DBI) tachyon scalar field arose from string theory is one candidate of the dark energy models. Previous study Calcagni and Liddle (2006) has shown that a class of scalar field potential is viable for the dark energy candidate. Here, we re-investigate the dynamics using alternative definition of dynamical variables as of Copeland, Liddle and Wands, 1998. We explicitly use two forms of tachyon potential which yields observationally acceptable range of equation of state parameter, $V(\phi) = V_c \exp(-\mu T)$ and $V(\phi) = V_c / \cosh(\mu T)$. The dynamics can be extended for qualitative and numerical approach.

Keywords: dark energy, DBI tachyon scalar field

References:

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