

Cosmological Constraints on Tachyonic Teleparallel Dark Energy Model

B. Fazlpour ^{a 1} and A. Banijamali ^{b 2},

^a *Department of Physics, Babol Branch, Islamic Azad University, Babol, Iran*

^c *Department of Basic Sciences, Babol Noshirvani University of Technology, Babol, Iran*

Abstract

Teleparallel gravity is an equivalent formulation of general relativity in which instead of the Ricci scalar R , one uses the torsion scalar T for the Lagrangian density. Recently, by adding quintessence scalar field, allowing also a non-minimal coupling to gravity in the Lagrangian of teleparallel gravity, the so called teleparallel dark energy has been proposed and it was found that such a non-minimally coupled quintessence theory has a richer structure than the same one in the frame work of general relativity. In the present work we are interested in tachyonic teleparallel dark energy in which tachyon scalar field is responsible for dark energy in the frame work of torsion gravity. We focus on constraining this model with the most recent observations of Type Ia supernova (SN Ia) and Baryon Acoustic Oscillations measurements and show that the scenario is compatible with observations.

¹b.fazlpour@umz.ac.ir

²a.banijamali@nit.ac.ir