BIANCHI TYPE-V BULK VISCOUS UNIVERSE WITH CONSTANT DECELERATION PARAMETER

L. K. Tiwari and Ajit Kumar

Department of Mathematics,
Faculty of Engineering & Computing Sciences,
Teerthanker Mahaveer University, Moradabad - 244001 (U.P.), INDIA

E-mail : laxmiallahabad@gmail.com, ajit.chauhan79@gmail.com

Abstract: In this article, we have obtained some exact solutions of the Einstein field equations with time-varying in existence of bulk viscosity in Bianchi type-V cosmological models. We have taken cosmic matter which follows a bar tropic equation of state. We see that the role of deceleration parameter (q) is important to describe the different phases of the universe. Finally, we conclude that universe decelerates due to positive value of q while universe accelerates due to negative value of q. Some physical properties and behaviors of parameters on the solutions of field equations are discussed in this paper.

Keywords and Phrases: Bianchi Type–V, Constant Deceleration Parameter, Hubble's parameter, cosmological constant.

2020 Mathematics Subject Classification: 83C15, 83F05.

1. Introduction

In general theory of relativity, "cosmological models" are generally established beneath the postulation that the matter content of the cosmos is sufficiently explained by a perfect fluid. The review of relativistic cosmological models generally has the energy-momentum tensor of matter by a perfect fluid. Now days, the "cosmological constant" problem is one of the serious parameter to study about universe in cosmology [19, 35]. In the circumstance of "quantum theory", "cosmological term" links to the "energy density of vacuum" and measures the energy of