

## Generalized Chaplygin Gas and Varying Bulk Viscosity in Lyra Geometry

**Authors :** A. K. Sethi, R. N. Patra, B. Nayak

**Abstract :** In this paper, we have considered Friedmann-Robertson-Walker (FRW) metric with generalized Chaplygin gas which has viscosity in the context of Lyra geometry. The viscosity is considered in two different ways (i.e. zero viscosity, non-constant  $\rho$ -dependent bulk viscosity) using constant deceleration parameter which concluded that, for a special case, the viscous generalized Chaplygin gas reduces to modified Chaplygin gas. The represented model indicates on the presence of Chaplygin gas in the Universe. Observational constraints are applied and discussed on the physical and geometrical nature of the Universe.

**Keywords :** bulk viscosity, lyra geometry, generalized chaplygin gas, cosmology

**Conference Title :** ICGRBH 2019 : International Conference on General Relativity and Black Holes

**Conference Location :** Singapore, Singapore

**Conference Dates :** July 04-05, 2019