

Abstract Submitted
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Fluid dynamics nature of supernova remnant (Crab Nebula) AH-MAD REZA ESTAKHR, Researcher — Supernova remnant (at early phase) is a high temperature fluid of gas and dust. after the explosion of a star in a supernova, the viscosity of supernova remnant changes with temperature. as supernova expand by time its temperature decreases and the viscosity increases, (or alternatively, the fluidity of supernova remnant tends to decreases) and led to resistance phase of supernova remnant fluid to flow. $U^\mu = \gamma(c, u(\vec{r}, t))$ denotes four-velocity vector field of supernova. $J^\mu = \rho U^\mu$ denotes four-current density of supernova fluid of gas and dust. Estakhr's Material-Geodesic equation is developed analogy of Navier Stokes equation and Einstein Geodesic equation to describe Fluid dynamics nature of supernova remnant (Crab Nebula): $\frac{DJ^\mu}{D\tau} = \frac{dJ^\mu}{D\tau} + \Gamma_{\alpha\beta}^\mu J^\alpha U^\beta = J_\nu \Omega^{\mu\nu} + \partial_\nu T^{\mu\nu} + \Gamma_{\alpha\beta}^\mu J^\alpha U^\beta$ Covariant formulation of Fluid dynamics nature of supernova remnant, describe the motion of fluid substances of supernova.

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