

On the divergence of Semiconformal curvature and space-matter tensor in General Relativity

Naeem Ahmad Pundeer (with Musavvir Ali and Zafar Ahsan)

Department of Mathematics

Aligarh Muslim University

India 202002

pundir.naeem@gmail.com, musavvirali.maths@gmail.com and zafar.ahsan@rediffmail.com

In this paper, the divergence of the semiconformal curvature tensor has been studied in detail. The semiconformal curvature tensor is considered invariant under conharmonic transformation and the necessary and sufficient conditions for the semiconformal curvature tensor to be divergence - free in a perfect fluid spacetime has been obtained. It is seen that aforementioned spacetimes either satisfy the vacuum - like equation of state or represent a FRW cosmological model. The semiconformal curvature tensor has also been expressed with regards to different known tensors in the literature and association between their divergences have been acquired.

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