

Abstract Submitted
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A new blackhole theorem and its applications to cosmology and astrophysics SHOUHONG WANG, Indiana Univ - Bloomington, TIAN MA, Sichuan University — We shall present a blackhole theorem and a theorem on the structure of our Universe, proved in a recently published paper, based on 1) the Einstein general theory of relativity, and 2) the cosmological principle that the universe is homogeneous and isotropic. These two theorems are rigorously proved using astrophysical dynamical models coupling fluid dynamics and general relativity based on a symmetry-breaking principle. With the new blackhole theorem, we further demonstrate that both supernovae explosion and AGN jets, as well as many astronomical phenomena including e.g. the recent reported are due to combined relativistic, magnetic and thermal effects. The radial temperature gradient causes vertical Benard type convection cells, and the relativistic viscous force (via electromagnetic, the weak and the strong interactions) gives rise to a huge explosive radial force near the Schwarzschild radius, leading e.g. to supernovae explosion and AGN jets.

Shouhong Wang
Indiana Univ - Bloomington

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