

Abstract Submitted
for the PSF15 Meeting of
The American Physical Society

Law of Gravity, Structure and Geometry of Black Holes and the Universe¹ SHOUHONG WANG, Indiana University, 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.

¹Supported in part by grants from the National Science Foundation (NSF), the Office of Naval Research (ONR) and the Chinese National Science Foundation

Shouhong Wang
Indiana University

Date submitted: 13 Oct 2015

Electronic form version 1.4