

# Abstract

Since the formulation of Einstein's equations of general relativity, analytical methods were applied to find their solutions. The complexity and the nonlinear character of the equations meant big difficulty of searching for solutions. Only recently the field of numerical relativity has been developed, which offered a much wider means of research of the properties of these equations.

In this thesis we firstly solved the problem of regularization of newtonian singular potential by the method of binding potentials. Next we applied the methods in general theory of relativity, where we found a suitable source and its pressures of the same spherically symmetrical problem. Further we investigated this known Schwarzschild solution in Weyl coordinates for better understanding and comparison of Bonnor's results.