Gravitation is an inevitable aspect, in fact a driving force in day to day life. In science there are many views about this force. Newton’s contribution about the gravity ended up many curiosities about the motions visible in the sky his theory explained the motion of the planets around the sun. However, being a scientific theory, Newton’s theory went under revision many times. Einstein’s general relativity is one of the extensions of Newtonian theory.

In the visible surroundings (including the sky) there are many strange objects. The existence of black holes is one of the consequences of general relativity.

In this thesis we have discussed some theories of gravitation. Two significant theories namely general relativity and Kaluza-Klein theory are used to study the geometry of the region interior to the black holes. Thesis contains total five chapters. The outline of the thesis is briefly summarized here.
Some of the results reported in this thesis have been published in the following papers.


4. Kambholja, V.G. and Hasmani, A.H., *Algebraic Computation of Riemann Curvature Tensor for a 5D Space using Mathematica*, Published Online

Also, a part of the work on 4-dimensional interior black hole solution was presented as a short communication by V. G. Kambholja during International Congress of Mathematicians (ICM), 19-27 August, 2010, Hyderabad, India