



OPEN TALK ANNOUNCEMENT VASP, EVLP

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Boson

Speaker:

Dr. Subharthi Ray

Short Term Visitor to Prof. Sandip Chakrabarti

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Title:

Compact stars in the modified gravity theories

Abstract

Our current understanding of the Universe, says that it is composed of about 4.9 % visible matter, 26.8 % dark matter and 68.3 % dark energy. Lack of proper understanding of these dark sectors (mainly dark energy) prompted scientists to build up phenomenological models with equation of states with a negative pressure, the approach of quintessence, etc. Another approach to address the late time acceleration of the Universe (which drives the idea of dark energy), is the modification of General Relativity at very large scales. To this effect, at present there is a world wide effort going on to look at the possible 'correct model' of modified gravity theories so as to avoid the concept of dark energy. Till date, there are many available modified gravity models which are reasonably well tested for large scale structures. However these models also need to be tested to be viable for the strong gravity regime of a neutron star or a black hole. In my present talk, I will briefly overview a few of the modified gravity models, coming from different considerations, and then I will discuss about our work, where we study the structure of Neutron stars in the $f(R)=R+\alpha R^2$ model (popularly known as the Starobinsky Model). I will address the issues we have faced in our study, and discuss the consequences and results.
