



دانشکده فیزیک دانشگاه صنعتی شریف سمینارهای هستگی گروه کیهان شناسی

سمینار ۱ : Gravitational Lensing in Gamma Ray Bursts

زینب کلانتری (دانشکده فیزیک دانشگاه صنعتی شریف)

سمینار ۲ : Gravitational Microlensing and Degeneracy Breaking

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درفصل تابستان سمینارها ۱۰ صبح برگزار خواهد شد!

Abstract of Seminar 1:

Gravitational lensing of gamma ray bursts (GRBs) by massive objects generates superimposed GRB images with a time delay. This could constrain compact dark matter in the intermediate mass range that has received a lot of attention following LIGO detection of merging black hole binaries. In this talk, I will review the basic astrophysical applications of gravitational lensing. Then, I will give a brief introduction on gravitational lensing as a probe of compact dark matter.

Abstract of Seminar 2:

Detection of light blending in a gravitational field, previously predicted by general relativity, stimulated a new line of research for astronomers. In 1986 Paczynski introduced the modern formalism of microlensing which proposed the observation of lensing of a source star by another star in the Milky Way galaxy. In a simple microlensing event, the only observable parameter that has physical information is the Einstein crossing time; a characteristic time scale of microlensing event. This parameter is related to physical properties of lens and source star which are their masses, distance and relative velocity. Here, there is a degeneracy problem that several methods have been proposed to overcome it. In this talk, after presenting a brief review of basic formalism and physics, I will show different methods of microlensing degeneracy breaking and will finally present my proposal for resolving the issue which is mainly based on Gaia observations.

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