



ΓΕΝΙΚΟ ΣΕΜΙΝΑΡΙΟ ΤΜΗΜΑΤΟΣ ΦΥΣΙΚΗΣ

PHYSICS COLLOQUIUM

Thursday, 10 May 2012

17:00 -18:00

3rd Floor Seminar Room

**“A Survey of the Most Massive Stars in the
Local Universe”**

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Abstract

Despite the large impact very massive stars ($>30 M_{\odot}$) have in astrophysics, their fundamental parameters remain uncertain. The most accurate method for deriving masses, radii and luminosities of such distant stars is to measure them in eclipsing binary systems. Currently, the most massive eclipsing binary accurately measured is WR20a, which consists of two 80 solar mass stars in a 3.7 day orbit. In total, only 18 very massive stars ($>30 M_{\odot}$) belonging to our Galaxy and Local Group galaxies have accurate determinations of their parameters. I will present the first results of a wide-ranging survey targeting the brightest and thus most massive stars in eclipsing binaries in both young massive clusters in the Milky Way and in nearby galaxies. The measurement of fundamental parameters for massive stars at a range of metallicities will provide much needed constraints on theories that model the formation and evolution of massive stars and will observationally probe the upper limit on the stellar mass.