



Gravitational Waves from Ultrashort Period Exoplanets and other Substellar Objects

José Ademir Sales de Lima

Universidade de São Paulo, Brasil

In the last two decades, thousands of extrasolar exoplanets like super Jupiters and other substellar were discovered based on different observational techniques. Their number must increase substantially in virtue of the ongoing and near-future approved missions and facilities. In our talk we propose that interesting signatures of binary systems including such objects and their parent stars can also be obtained measuring the pattern of gravitational waves that will be made available by the new generation of detectors including the space-based LISA (Laser Interferometer Space Antenna) observatory. As an example, a subset of substellar objects with extremely short periods (less than 80 min) is discussed. Our analysis suggests that the emitted gravitational wave pattern may also provide an efficient tool to discover ultrashort period exoplanets. Some other possible physical consequences are also discussed.