gravitational influence of two massive bodies and a particular dissipative force. The circular restricted three body problem, which describes the motion of this particle, has five equilibrium points in the frame which rotates with the same angular velocity of the massive bodies: two equilateral stable points (L_4, L_5) and three colinear unstable points (L_1, L_2, L_3). A particular solution for this problem is a stable orbital libration, called tadpole orbit, around the equilateral points. The inclusion of a particular dissipative force can alter this configuration. We investigated the orbital behaviour of a particle initially located near L_4 or L_5 under the perturbation of a satellite and the Poynting-Robertson drag. This is an example of breakdown of quasi-periodic motion about an elliptic point of an area-preserving map under the action of dissipation. Our results show that the effect of this dissipative force is more pronounced when the mass of the satellite and/or the size of the particle decrease leading to, although confined, chaotic orbits. From the maximum Lyapunov Characteristic Exponent a final value of g was computed after a time span of 10^6 orbital periods of the satellite. This result enables to obtain a critical value of $\log g$ beyond which the orbit of the particle will be unstable, leaving the tadpole behaviour. For particles initially located near L_4 the critical value of $\log g$ is -4.07 and for those particles located near L_5 the critical value of $\log g$ is -3.96.

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ANALYSING THE NEW SATURNIAN RINGS, R/2004 S1 AND R/2004 S2 RINGS

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The Cassini-Huygens arrival into the Saturnian system brought a large amount of data about the satellites and rings. Two diffuse rings were found in the region between the A ring and Prometheus. R/2004 S1 is coorbital to Atlas and R/2004 S2 is close to Prometheus. In this work we analysed the closest approach between Prometheus and both rings. As a result we found that the satellite removes particles from R/2004 S2 ring. Long term numerical simulations showed that some particles can cross the F ring region . The well known region of the F ring, where small satellites are present and particles are being taking from the ring, gains a new insight with the presence of particles from R/2004 S2 ring. The computation of the Lyapunov Characteristic Exponent reveled that the R/2004 S2 ring lies in a chaotic region while R/2004 S1 ring and Atlas are in a stable region. Atlas is responsible for the formation of three regimes in the R/2004 S1 ring, as expected for a satellite embedded in a ring.

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INTERMITTENT CHAOS IN SOLAR AND PLANETARY RADIO EMISSIONS

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Observational data from solar radio emissions have presented chaotic signatures. Isliker and Benz (1994), using data from several solar events involving radio emissions from the spectometer IKARUS at Zurich, found that during solar radio bursts the temporal time series exhibit intermittent patterns. Kurths and Schwarz (1994) showed that solar radio bursts detected at the Metsahovi Radio Research Station (Helsinki) exhibit transient behavior, which is characteristic of chaotic systems. Nonlinear wave-wave interactions can be a source of radio emissions. Theoretical studies of generation of solar and planetary radio emissions have been carried out. Chian et al. (2000) studied a model for the nonlinear 3-wave interactions involving Langmuir, whistler and Alfvén waves, and its evolution from orderly to chaotic behaviors. In Chian et al. (2002), two types of intermittency were recognized in the numerical simulation of space plasma emissions. Miranda et al. (2005) investigated the phenomenon of intermittency for a nonlinear model of 4-wave interactions. In this work we study the temporal dynamics of a nonlinear model of 3-wave interactions involving one pump wave and two damped waves with different damping rates in space plasmas. First, we construct a bifurcation diagram by choosing the damping rate of the second induced wave as our control parameter, and keeping all other system parameters constant. Then, we show the occurrence of two different types of intermittency in the numerical time series. The results presented in this study can improve our understanding of the intermittency frequently observed in chaotic time series from solar and planetary radio emissions.

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FINDING MINOR ABSORPTIONS IN THE VISIBLE SPECTRA OF RED-SLOPED OBJECTS

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Red-sloped objects, usually classified as D-types, are preferably located in the outer main belt and can also be found among the Jupiter Trojans and the Transneptunian Objects population. Their surface mineralogy is currently related to a mixture of organics, anhydrous silicates, opaque material and ice.