The effect of Coriolis coupling in a Hénon-Heiles-like system

V. Lanchares[1], **M. Iñarrea**[2], **J.P. Salas**[2],

SUMMARY

In this communication, we consider the escape dynamics from the potential well of a Hénon-Heiles-like system under the effect of a Coriolis coupling. It is stated that three different escape channels exist, which are linked to three saddle points, two of them with the same energy. When the escape channels are open, an increasing angular velocity results in a greater number of trapping orbits and the loss of the Wada property, with smooth boundaries for the escape basins. However, the two escape channels with the same energy do not behave in the same way, and one of them is favored by the Coriolis coupling.

Keywords: Hénon-Heiles system, escape dynamics, Coriolis coupling

AMS Classification: 70H33, 37C79, 37J46

References

pp. first page–last page. Publisher, city, year

[1]Departmento de Matemticas y Computación
Universidad de La Rioja
email: vlancha@unirioja.es

[2]Área de Física Aplicada
Universidad de La Rioja
email: manuel.inarrea@unirioja.es, josepablo.salas@unirioja.es