

Meeting: 1006, Lubbock, Texas, SS 3A, Special Session on Classical and Differential Galois Theory

1006-70-169 **Juan J. Morales-Ruiz*** (juan.morales-ruiz@upc.edu), Universidad Politecnica de Catalunya, MA2, Planta 4, Despatx 423, Campus Nord, Edif. OMEGA, C. Jordi Girona, 1-3, 08034 Barcelona, Spain. *Non-integrability of some problems in Celestial Mechanics: a differential Galois approach.*

In this talk I present several results on the non-integrability of some many body problems in Celestial Mechanics. Nevertheless, we proved the non-integrability of the following problems:

- a) The Hill problem,
- b) Several other many body problems, like the three-body problem.

The main tools for the study are the non-integrability theorems of Morales-Ruiz and Ramis. The problem a) was studied in a joint work with Simon and Simó and the problems in b) in a joint work with Simon. (Received February 14, 2005)