Publicacions més rellevants de la línia de recerca:

Sistemes Hamiltonians i Mecànica Celeste: configuracions centrals i òrbites periòdiques.

Referència: Corbera, M. and Llibre, J., Central configurations of nested regular polyhedra for the spatial $2n$-body problem. *J. Geometry and Physics* **58(9)** (2008), pp. 1241–1252.

Abstract:

We consider $2n$ masses located at the vertices of two nested regular polyhedra with the same number of vertices. Assuming that the masses in each polyhedron are equal, we prove that for each ratio of the masses of the inner and the outer polyhedra there exists a unique ratio of the length of the edges of the inner and the outer polyhedra such that the configuration is central.

Referència: Llibre, J. and Valls, C., Formal and analytic first integrals of the Einstein-Yang-Mills equations. *J. Physics A* **38(37)** (2005),pp. 8155–8168.

Abstract: In this paper we provide a complete description of the first integrals of the classical Einstein-Yang-Mills equations that can be described by formal series. As a corollary we also obtain a complete description of the analytic first integrals in a neighbourhood of the origin.

Referència: Barrabés, E., Cors, J.M., Pinyol, C. and Soler, J. J_2 effect and elliptic inclined periodic orbits in the collision restricted three-body problem., *SIAM J. Applied Dynamical Systems* **7(1)** (2008), pp. 1–17.

Abstract: The existence of a new class of inclined periodic orbits of the collision restricted three-body problem is shown. The symmetric periodic solutions found are perturbations of elliptic Kepler orbits, and they exist only for special values of the inclination and are related to the motion of a satellite around an oblate planet.