

Periodic motions of the Kepler's problem on \mathbb{S}^2

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The motions of a particle under the action of a time-periodic central force in \mathbb{S}^2 can be governed by the following second order differential equation:

$$u'' = \frac{c^2 \cos u}{\sin^3 u} + \frac{h(t)}{\sin^2 u},$$

where $h \in L(\mathbb{R}/T\mathbb{Z})$ and $c \in \mathbb{R}$. For the latter equation, we will discuss the existence of T -periodic solutions and we will present some open problems.

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