

## THE CHARGED HEAVY TOP AND THE DIRAC PROBLEM

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**Abstract.** The Dirac problem for the charged heavy top is discussed and some of its properties are pointed out.

### 1. Introduction

The notion of charged heavy top was recently introduced by Thiffeault and Morrison [5] and then was recently studied by Puta and Cașu [4]. The goal of our paper is to point out some new properties of this top from the geometric prequantization point of view.

### 2. The Charged Top

A charged heavy top is by definition a heavy top immersed in a fixed gravitational field and in an electric field. We shall denote by

$$\begin{aligned}m &= (m_1, m_2, m_3) \\a &= (a_1, a_2, a_3) \\b &= (b_1, b_2, b_3)\end{aligned}$$

the angular momentum vector, the position of the center of mass, and the position of the center of charge, respectively. The direction and strength of the fixed gravitational and electric forces are given by the vectors

$$\alpha = (\alpha_1, \alpha_2, \alpha_3)$$

and respectively

$$\beta = (\beta_1, \beta_2, \beta_3).$$