

## **The Poincaré-Hopf Theorem in Nonholonomic Mechanics**

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In this talk we will discuss the usage of the Poincaré-Hopf theorem and the technique of Hamiltonization as a means to study the integrability nonholonomic mechanical systems (briefly, mechanical systems subject to non-integrable velocity constraints). We will focus primarily on a generalized Klebsh-Tisserand case of the Suslov problem, and use the aforementioned approach to determine the topology of the (two-dimensional) invariant manifolds, and in particular their genus. The results will be contrasted with those expected of Hamiltonian systems.