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Nonholonomic systems and the hamiltonization problem

In this talk we will discuss geometric features of nonholonomic systems and their behavior after a reduction by a group of symmetries.

In particular, we will show how the failure of the Jacobi identity is modified after a reduction by symmetries and also by considering 'gauge related brackets'. We will present some concrete examples where Poisson and twisted Poisson brackets appear in the description of the reduced dynamics. In these cases, we will also discuss the role of conserved quantities.