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**Lie algebroids and mechanics.** (English) [Zbl 1354.70032]


Summary: The category of Lie algebroids has proved useful in the formulation of problems in applied mathematics, algebraic topology, and differential geometry. In the context of Mechanics, Alan Weinstein proposed a program for the formulation of Lagrangian and Hamiltonian systems on Lie algebroids. In this course, I will review recent results about such formalism, including a symplectic and a variational description, and several extensions developed in recent years by many authors. Applications to the reduction of such systems will be presented.

For the entire collection see [Zbl 1166.81006].

**MSC:**

- 70H03 Lagrange’s equations
- 70G45 Differential geometric methods (tensors, connections, symplectic, Poisson, contact, Riemannian, nonholonomic, etc.) for problems in mechanics

**Full Text:** DOI