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Quasivelocities and Symmetries in Nonholonomic Dynamics.

Quasivelocities are the components of a mechanical system's velocity relative to a set of vector fields that are not associated with configuration coordinates. Nonholonomic systems are mechanical systems subject to velocity constraints. This talk concentrates on the utilization of quasivelocities in the formulation of nonholonomic systems with symmetry. In particular, the use of quasivelocities in understanding unusual momentum conservation laws and qualitative analysis of nonholonomic dynamics is discussed. (Received February 09, 2009)