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Sommario/riassunto

This book gives a modern differential geometric treatment of linearly nonholonomically constrained systems. It discusses in detail what is meant by symmetry of such a system and gives a general theory of how to reduce such a symmetry using the concept of a differential space and the almost Poisson bracket structure of its algebra of smooth functions. The above theory is applied to the concrete example of Caratheodory's sleigh and the convex rolling rigid body. The qualitative behavior of the motion of the rolling disk is treated exhaustively and in detail. In particular, it classifies all mot