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Abstracts of Short Communications and Posters

Section:

9. Ordinary Differential Equations and Dynamical Systems

1991 Mathematical Subject Classification: 34, 70, 93
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The equations of invariant and oriented manifolds of dynamical systems. A new form of the equations of invariant manifolds is obtained which establishes the interconnection between Poincare - Kharlamov and Levi - Civita approaches to the integrability problem of nonlinear dynamical systems with the help of invariant relations method. Analogous result is obtained for the manifolds of more complicated structure - oriented with respect to the system, in its terms the theorem for controllability of nonlinear systems is proved. The connection between invariant and integral manifolds of dynamical systems is established. These results are applied to the investigation of the integrability and controllability problems in the rigid body dynamics.