Moving frames for pseudogroups

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In this talk, I will discuss new computational algorithms for infinite-dimensional Lie pseudo-groups. The method is based on the variational bicomplex and a new generalization of the Cartan theory of moving frames. Applications will include practical algorithms for computing complete systems of differential invariants, invariant differential forms and structure equations, classification of syzygies and recurrence relations, solutions to equivalence and symmetry problems for differential equations and variational problems arising in geometry and physics.