

MOVING FRAMES IN APPLICATIONS

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Abstract

The series of talks will center on applications of the new, equivariant approach to the classical method of moving frames that has been developed over the past decade. The method is completely algorithmic, and can be applied to arbitrary group actions, including infinite-dimensional pseudo-groups. All constructions can be systematically implemented in any general symbolic manipulation program, e.g. Maple or Mathematica. Differential invariant and joint invariant signatures are being successfully applied to basic problems in object recognition, classification and symmetry detection in images. A significant challenge is to extend these constructions to the discrete regime, thereby potentially connecting invariant numerical algorithms for submanifold flows with discrete integrable systems.