

Applications of theory of invariant connections to dynamical systems

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In this presentation, we discuss the geometric constructions of invariant connections and invariant Poisson structures that emerge from the canonical actions of compact Lie groups on (principal) fiber bundles. These constructions are particularly relevant to Yang-Mills theory since a Yang-Mills field is mathematically defined as a connection on a fiber bundle over a Riemannian manifold. Specifically, we will describe a class of G -invariant gauge Poisson structures and Wong's type equations, which, under certain conditions, possess a Lie algebra of constants of motion.

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