SU(2) Lie-Poisson algebra and its descendants

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ABSTRACT

The Poisson structure is a widely investigated concept that has both physical and mathematical relevance. The concept originates from Poisson’s research on analytic mechanics, which now provides a very general and solid framework for describing Hamiltonian dynamics.

Thus, the concept of a Poisson structure has subsequently found numerous applications beyond the original focus that was on classical mechanics and differential geometry. Poisson structures now appear in a large variety of contexts starting from string theory, topological and conformal field theory and integrable systems; extending to deformation quantization and non-commutative geometry; and all the way to algebraic geometry, representation theory and abstract algebra. I will conclude my talk with a brief overview of the ARGOS project, a FORTH initiative to design and deploy a next-generation radio telescope that will uniquely address these challenges.