Commutative Poisson algebras and non-Abelian Hamiltonian systems.

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By a well-known procedure - often called taking the classical limit - quantum systems reduce to classical systems, equipped with a Hamiltonian structure (symplectic or Poisson). From deformation quantization theory, we know that a formal deformation of a commutative algebra induces a Poisson bracket, and that the classical limit of a derivation in the deformed algebra yields a Hamiltonian derivation defined by this bracket.
In this talk, I present a generalization of this framework to formal deformations of an arbitrary noncommutative associative algebra. This approach allows us to define non-Abelian Hamiltonian systems within the setting of commutative Poisson algebras.