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*Prequantization of moment map theories*

In 2003, P. Xu introduced quasi-symplectic groupoids $\Gamma_1 \rightrightarrows \Gamma_0$ as a natural target for moment maps, providing a unifying framework for various moment map theories. These include (classical) Hamiltonian actions of compact Lie groups, group-valued moment maps, Poisson-Lie group actions, and Hamiltonian loop-group actions. Quasi-symplectic groupoids are also known as twisted symplectic groupoids, which are the global objects integrating twisted Dirac structures. The 'twist' is encoded by a closed $3$-form on $\Gamma_0$ (e.g. for group-valued moment maps, it is the Cartan $3$-form on a compact Lie group $\Gamma_0 = G$).

This talk discusses prequantization in this framework. We briefly recall the prequantization of C. Laurent-Gengoux and P. Xu for the case of exact quasi-symplectic groupoids (where the twisting $3$-form is exact), and discuss recent work that extends the definition of prequantization to non-exact quasi-symplectic groupoids.