

Quantum groups in a (coco) nutshell

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(Lie) Groups are typically seen as encoding a symmetry structure. For some phase spaces, the symmetry structure might need to be equipped with a non-trivial Poisson structure, which must then be compatible with the group product (to have a well defined symmetry action). This defines the notion of Poisson Lie group. When quantizing the system, the Poisson Lie group becomes a quantum group. I will provide a compact introduction to these concepts having in mind as leading example, the 3d (quantum) gravity framework, where such Poisson Lie/quantum symmetries are key to understand the quantum theory.

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