



Contribution ID: 63

Type: **Talk in a parallel session**

A (not) new geometric approach to Ashtekar variables and symmetry reduction

Monday, 8 July 2024 17:00 (30 minutes)

We will present a mathematical formulation of Ashtekar variables using the language of differential topology, aligning as closely as possible with the mathematical description of Yang-Mills theories. This approach illuminates the similarities while highlighting the differences between the two.

Additionally, within this framework, we can properly discuss the imposition of symmetries at the classical level and offer a quantization that adheres to the Loop Quantum Gravity prescriptions.

As an application, we will construct the classical cosmological sector of General Relativity using Ashtekar variables without invoking the minisuperspace. This cosmological sector has a set of constraints that mirror those in LQG, leading naturally to a quantization in terms of spin-network states.

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