



General Relativity and Quantum Cosmology

Spinors and Voros star-product for Group Field Theory: First Contact

Maité Dupuis, Florian Girelli, Etera R. Livine

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In the context of non-commutative geometries, we develop a group Fourier transform for the Lie group $SU(2)$. Our method is based on the Schwinger representation of the Lie algebra $\mathfrak{su}(2)$ in terms of spinors. It allows us to prove that the non-commutative R^3 space dual to the $SU(2)$ group is in fact of the Moyal-type and endowed with the Voros star-product when expressed in the spinor variables. Finally, from the perspective of quantum gravity, we discuss the application of these new tools to group field theories for spinfoam models and their interpretation as non-commutative field theories with quantum-deformed symmetries.

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