

# High Frequency Gravitational Waves and Einstein Equations with $U(1)$ Symmetry

*vendredi 8 décembre 2023 15:30 (1 heure)*

In this talk, I will present two works of Yvonne Choquet-Bruhat. The first one, written in 1969, concerns the behaviour of high-frequency gravitational waves, and enlighten the beautiful structure of Einstein equations. She has subsequently generalized this work to Einstein equations coupled with other fields (electromagnetic, fluid...). The second more recent work I will speak about concerns the global existence of cosmological solutions with  $U(1)$  symmetry, with the introduction of the elliptic gauge. I will then present a work in collaboration with Jonathan Luk, about high-frequency solutions of Einstein equations with  $U(1)$  symmetry, in which the elliptic gauge is a very nice setting to study the superposition of waves.

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