



Contribution ID: 48

Type: **Talk (virtual)**

## Coherent quantum states in resonant-mass gravitational wave detectors

*Tuesday 6 September 2022 12:00 (20 minutes)*

Quantum coherent states is a new features in quantum mechanics. Resonant-mass gravitational waves detectors didn't succeed in detecting gravitational waves probably because of the operational frequency range chosen when the design of such detectors. But such detectors can be important in the future. This work describe the importance of quantum coherent states when the a resonant-mass gravitational detects a energy from the gravitational wave very very close to the quantum limit. At this point quantum coherent states of vibration and quantum non-demolition measurements becomes essential.

**Authors:** FRAJUCA, Carlos (IFSP); Mr SILVA, Douglas Alves da (FURG); Dr BORTOLI, Fabio da Silva (IFSP); Mr SELBACH, Lucas Bonifacio (FURG); Prof. MAGALHAES, Nadja Simao (UNIFESP)

**Presenter:** FRAJUCA, Carlos (IFSP)