Contribution ID: **90** Type: **Invited oral contribution (hot topic)**

The general structure of quantum-classical theories: for gravity and more

Wednesday 9 July 2025 09:00 (40 minutes)

It is possible to couple quantum and classical variables consistently (i.e. without paradoxes like faster than light signalling) provided one accepts a certain amount of stochasticity. This is useful, for example, if one wants to entertain the possibility that spacetime is fundamentally classical. These hybrid dynamics are not trivial (like meanfield) but they are nothing fancy either, and one way to construct them is via "measurement and feedback". I will explain how this is concretely done, and how the construction gives some intuition about the type of physics one can expect. I'll also try to mention some of the challenges in applying this formalism to gravity.

Working Group

WG3 - Low-energy gravitational effects in quantum systems

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Session Classification: WG3 Low-energy Gravitational Effects in Quantum Systems 2