Black Holes, Gravitational Waves and Space-Time Singularities

Contribution ID: **20**   Type: **not specified**

Postquantum stochastic semiclassical gravity: world without Schrödinger cats

Friday 21 June 2024 15:00 (40 minutes)

Unified theory of space-time with quantized matter and the physics of quantum measurement were considered unrelated for long time, studied by two separate research communities. Quantum cosmologists have always been part of main stream physics, using heavy artillery of mathematics. Quantum measurement problem solvers, with the speaker among them, used light weapons and sometimes whimsical identification of their problems, e.g. in terms of the Schrödinger cat paradox. The bottle-neck of quantum gravity may be this paradox, not cosmologists' failure in finding the ultimate framework of quantization. A solution of quantum gravity problem might be built on the non-relativistic theory of spontaneous wavefunction collapse, eliminating Schrödinger cat states. Such "postquantum" theory is captivating conceptionally, exists formally, but its general - even Lorentzian - covariance could hit a wall.

Presenter: DIOSI, Lajos (Wigner Research Centre for Physics)