



Emergence of Extreme Universe from Quantum Information

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Recently, a new interpretation of gravitational spacetime in terms of quantum entanglement has been obtained. The idea of holography in string theory provides a simple geometric computation of entanglement entropy. This generalizes the well-known Bekenstein-Hawking formula of black hole entropy and strongly suggests that a gravitational spacetime consists of many qubits with quantum entanglement. Also a new progress on black hole information problem has been made recently by applying this idea. I will explain these developments in this colloquium.

