



FACULTY
OF MATHEMATICS
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MASTER THESIS

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Emergence of space geometries from quantum entanglement

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Abstract: Connecting the field of Quantum Physics and General Relativity is one of the main interests of contemporary Theoretical Physics. This work attempts to find solution to simplified version of this problem. Firstly entropy is shown to be a good meeting point between the two different theories. Then some of entropy's less intuitive properties are shown, namely its dependence on area, not volume. This relation is studied from both Relativistic and Quantum viewpoint. Afterwards there is a short description of a quantum model interpretable as geometry based on the information between its subsystems. Lastly, results of computations within this model are presented.