General Relativity and Quantum Cosmology

Gravitation and inertia; a rearrangement of vacuum in gravity

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We address the gravitation and inertia in the framework of 'general gauge principle', which accounts for 'gravitation gauge group' generated by hidden local internal symmetry implemented on the flat space. We connect this group to nonlinear realization of the Lie group of 'distortion' of local internal properties of six-dimensional flat space, which is assumed as a toy model underlying four-dimensional Minkowski space. The agreement between proposed gravitational theory and available observational verifications is satisfactory. We construct relativistic field theory of inertia and derive the relativistic law of inertia. This theory furnishes justification for introduction of the Principle of Equivalence. We address the rearrangement of vacuum state in gravity resulting from these ideas.

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