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The geometry of the pseudo-complex General Relativity

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The coordinates of standard General Relativity are extended to pseudo-complex variables. In the eight dimension space the geometric differential structure is investigated. Mapping to the physical subspace with real coordinates leaves a remnant of the pseudo-complex structure, which adds terms to the Lagrangian. The Einstein equations are modified, adding the contributions of an energy-momentum tensor, describing repulsive dark energy. As a consequence, the event horizon of the black hole vanishes and transforms it into a gray hole.

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