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The physics of GRBs
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The fundamental role of recent astrophysical observations pertaining to GRBs are shown to promote a revival of fundamental issues in GRBs, in black hole physics and in relativistic quantum field theory. The possibility to observe for the first time the process of vacuum polarization at the energy scale of $10^{54}$ ergs is presented. The profound consequences of the results on the physics of neutron stars and on black hole electrodynamics are presented and discussed. Some new perspectives in relativistic quantum field theory are as well outlined.

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