Energy distribution of Reissner-Nordstrom-anti-de Sitter black holes with negative or vanishing curvature[1] PAUL HALPERN[2], University of the Sciences in Philadelphia — We use the Einstein energy-momentum complex to investigate the energy distributions of the generalized Reissner-Nordstrom family of spacetimes in 3+1 dimensions with asymptotically anti-de Sitter behavior. We replace the standard spherically-symmetric metric with two alternative geometries, each a solution of the Einstein-Maxwell equations with a negative cosmological constant. The first is a static "black plane" solution with vanishing two-dimensional curvature. The second possesses two-dimensional surfaces with constant negative curvature. We calculate the energy distributions of these models as functions of the mass, charge and cosmological constant. Comparing these expressions to those of the standard Reissner-Nordstrom-anti-de Sitter solution, we comment on the qualitative differences.

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