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A class of special dilatonic dyon-like black hole solutions in the model with two Abelian gauge fields and two scalar fields

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A class of dilatonic black hole dyon-like solutions in the gravitational $4d$ model with two scalar fields, two 2-forms and two 2-dimensional dilatonic coupling vectors is obtained. The solutions are governed by two parameters $P > 0$ and $\mu > 0$. For collinear dilatonic coupling vectors the metric of the solution is coinciding with that of the Reissner-Nordstr\"om one. The physical parameters of the solutions: gravitational mass, scalar charge, electric and magnetic charges, Hawking temperature, black hole area entropy and parametrized post-Newtonian (PPN) parameters are obtained. The PPN parameters do not depend on the dilatonic coupling vectors. A lower bound on the gravitational mass is found.

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