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Exact solution of the relativistic magnetohydrodynamic equations in the background of a plane gravitational wave with combined polarization

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Abstract

We obtain an exact solution of the self-consistent relativistic magnetohydrodynamic equations for an anisotropic magnetoactive plasma in the background of a plane gravitational wave metric (PGW) with an arbitrary polarization. It is shown that, in the linear approximation in the gravitational wave amplitude, only the e+ polarization of the PGW interacts with a magnetoactive plasma. © 2011 Pleiades Publishing, Ltd.

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