

Magnetized Kerr-Newman black hole: dynamics of charged particles in exact solutions

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Flow lines of plasma near a weakly magnetised Kerr-Newman black hole were studied in seminal papers by Ruffini, Damour, Hani, and others in 1970s. Here, following Karas & Vokrouhlicky, we recall the motion of charged particles around magnetized black holes within the framework of the guiding centre approximation, construct surfaces of constant magnetic and electric fluxes, and show the shapes of the plasma horizon in one of generalized, exact magnetized Kerr-Newman (MKN) spacetime.

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