

Primordial magnetic fields and their gravitational wave production

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I will briefly review the current status of magnetic field observations in galaxies and clusters. These experimental observations can be explained assuming that the primordial Universe was permeated by a seed magnetic field. Several mechanisms have been proposed to generate such a primordial field. I will explain how to obtain useful constraints on the amplitude of seed magnetic fields by studying their production of gravitational waves: these upper bounds turn out to be very stringent for both helical and non-helical primordial magnetic fields.

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