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Higgs mechanism and symmetry breaking in strong magnetic field

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We discuss the effect of a strong magnetic field in the behavior of the symmetry of an electrically neutral electroweak plasma. We analyze the case of a strong magnetic field and low temperatures as compared with the W rest energy. If the magnetic field is large enough, it is self-consistently maintained. Charged vector bosons play the most important role, leading only to a decrease of the symmetry breaking parameter, the symmetry restoration not being possible.

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