High Energy Physics - Phenomenology

A decay of the ultra-high-energy neutrino $\nu_e \to e^- W^+$ in a magnetic field and its influence on the shape of the neutrino spectrum

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The width of the neutrino decay into the electron and W boson in a strong external magnetic field is obtained from the imaginary part of the neutrino self-energy. This result corrects the formulae existing in the literature. The mean free path of an ultra-high energy neutrino in a strong magnetic field is calculated. An energy cutoff for neutrinos propagating in a strong field is defined.

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