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Effect of a primordial magnetic field on the dissipation coefficient in a warm inflation scenario

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Magnetic fields appear everywhere in the universe. Their widespread presence at high redshifts and very large scales suggests that their origin could be primordial. In particular, their presence during the inflationary epoch can certainly not be ruled out. In the warm inflation scenario, the coupling of the inflaton to other bosonic and fermionic fields gives rise to dissipative effects that modify the inflationary dynamics. Since primordial magnetic fields could have an effect on both the effective inflationary potential and the inflaton decay process, their contribution must be considered together with the finite temperature corrections. We review here their effect on the inflationary potential and present preliminary results of their intervention in the dissipation process.

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