

Abstract Submitted
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Radiation in equilibrium with plasma and plasma effects on cosmic microwave background¹ VADIM MUNIROV, NATHANIEL FISCH, Princeton University — The spectrum of the radiation of a body in equilibrium is given by Planck's law. In plasma, however, waves below the plasma frequency cannot propagate, consequently, the equilibrium radiation inside plasma is necessarily different from the Planck spectrum. We derive, using three different approaches, the spectrum for the equilibrium radiation inside plasma. We show that, while plasma effects cannot be realistically detected with technology available in the near future, there are a number of quantifiable ways in which plasma affects cosmic microwave background (CMB) radiation.

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