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Primordial Magnetic Fields, CMB and the Hubble tension

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A stochastic primordial magnetic field (PMF), if present in the plasma prior to last scattering, would induce baryon inhomogeneities and speed up cosmic recombination. The consequently smaller sound horizon at last scattering, along with more subtle changes in recombination history, have a significant impact on the observed cosmic microwave background (CMB) temperature and polarization, and may help relieve the Hubble tension. Intriguingly, the strength of the magnetic field required to alleviate the Hubble tension happens to be of the right order of magnitude to also explain the observed magnetic fields in galaxies, clusters of galaxies and the intergalactic space. I will review this proposal and provide an update on its current status.

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