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Black Holes in the 21cm signal of HI from cosmic dawn

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A deep absorption in the 21-cm line of atomic hydrogen (HI), redshifted to the epoch of cosmic dawn ($z \sim 20$), was reported by the EDGES experiment. To explain that absorption trough it has been proposed that either an additional exotic cooling mechanism, or a brighter radio background emission previously unaccounted for is needed. Here we discuss the possibility that the required cosmic radio background could be produced by non-thermal emission from a prolific population of black holes formed at cosmic dawn. We conclude that unless black holes formed at that epoch are radically different from those observed in the local Universe, the radio emission is orders of magnitude below the required levels.

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