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21cm emission in primordial clouds with full chemical computation

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The 21cm hydrogen line is present during all the eras following the cosmological recombination, containing information about both the cosmology and the astrophysical processes at work in the universe.

During this presentation, I will discuss the 21cm emission from collapsing gas clouds. I will particularly take into account the gas cooling due to thermal molecular functions. To do so, one has to compute the full chemical network of reactions between atomic and molecular species. The resulting cooling channel can enable, under certain conditions, the growth of thermal instabilities which are a crucial ingredient in order to trigger the process of fragmentation in haloes.

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