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First Stars and Black Holes in the Reionization Era

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Abstract

The phase transition by which the cosmic gas turned again into an ionized state after recombination is dubbed Cosmic Reionization. This process is driven by the first sources of UV light in the universe and therefore can teach us a lot on the formation of the first stars and black holes. I will first discuss the key physical aspects of the formation of these sources from a theoretical point of view. I will then concentrate on the identification of experimental tests of current theories based on recently available and forthcoming data from deep surveys, and outline the potential of complementary strategies, as for example, the Near Infrared Background fluctuations.