High-redshift QSOs in the GOODS

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Multiwavelength surveys are a key tool in detecting Active Galactic Nuclei. AGNs are recognizable from their color properties and/or their infrared/X-ray emission. We discuss the most recent results about the search of QSOs candidates in the GOODS fields. Our selection is based on optical color criteria and on the matching of the optical ACS database with infrared and X-rays counterparts. We focus our attention on high-z candidates by tailoring color criteria particularly efficient in detecting QSOs at redshifts from 3.5 to 5.2. From these observation we obtain a sample of QSOs at redshifts from 3.5 to 5.2 and we put new constraints on the faint end of the Luminosity Function at those redshift, which is a key ingredient to understand the interplay between the formation of super-massive black holes and to measure the QSOs contribution to the UV ionizing background. Finally we compare our results with theoretical models of joint formation and evolution of galaxies and QSOs inside Dark Matter Halos, with particular emphasis on the QSO emission in X-ray and optical bands.

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