The Luminosity Function of high-redshift QSOs

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Abstract

Multiwavelenght surveys are a key tool in detecting AGNs that are recognizable from their color properties and/or their infrared/X-ray emission. We discuss our selection of QSOs candidates in the GOODS fields based on optical color criteria and on the matching with X-rays counterparts. We present the results of the spectroscopic follow-up of our candidates. From these observations we build up a sample of faint QSOs at redshifts from 3.5 to 5.2 with magnitude M_{145} as faint as -21. We combine our sample with SDSS observations at brighter magnitudes in order to estimate the QSO-LF for $-28.00 < M_{145} < -21.0$ in the redshift interval of interest. We implemented a Monte-Carlo technique to estimate the redshift evolution of the QSO-LF and the QSO space density. We compare our results with models of AGN formation in order to give constraints on the mechanisms responsible for the joint evolution of Galaxies and AGNs.