Results from selection of high redshift radio-loud quasars

D. Tuccillo[1], J. I. Gonzalez-Serrano[1], and R. Carballo[2]

[1] Instituto de Fisica de Cantabria (CSIC-Univ. de Cantabria), Santander, Spain
[2] Dpto. de Matematica Aplicada y Ciencias de la Computacion, Univ. de Cantabria, Spain

Abstract

We present results on reliable selection of Radio Loud Quasars (RLQ) at high redshift ($z > 3.6$), based on the combined use of the surveys FIRST and SDSS. We explore the redshift range $3.6 < z < 4.6$ by cross matching the FIRST catalogue and the SDSS-DR7 photometric survey. We selected RLQ candidates by using an improved version of the Neural Network machine-learning technique similar to that in Carballo et al. (2008), that were observed and identified spectroscopically at the NOT telescope. Taking into account previous selections, these techniques lead to the identification of 22 new RL quasars out of a total of 48 candidates observed. The last SDSS quasar catalogue (V), based on SDSS DR7 (Schneider et al. 2010), lists 73 QSO matching our selection criteria. Fifteen of our new high-redshift QSOs are still missing in this catalogue. Therefore, in addition to a good efficiency, our technique leads to a very high completeness (97%) compared to that of SDSS. This allows to determine the most accurate luminosity function up to date for RLQ in this range of high redshift.