SIMULTANEOUS OPTICAL TO NEAR-IR OBSERVATIONS OF BLAZARS.

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We obtained simultaneous optical spectrophotometry (4000-8000 Å) and near-IR photometry (JHKL) for 34 blazars, with repeated observations for 21 of them. All the data were taken at ESO and cover a period of 3 years with a typical time interval of 6 months. The observations were corrected for interstellar extinction and analyzed using a uniform procedure. This allows to form a large and homogeneous data set of optical-near-IR measurements of blazars emission.

For each observation we constructed a composite spectral flux distribution (SFD) covering the range 8×10^{13}–7×10^{14} Hz. We find that, with very few exceptions, the SFD of each object is well described either by a single power law ($f_\nu \propto \nu^{-\alpha}$) or by a power law plus the contribution of a giant elliptical host galaxy (see Fig. 1). Our results show that, contrary to other findings, *negative* ($d\mathrm{Log}(f_\nu)/d\mathrm{Log}(\nu) < 0$) spectral curvatures in the optical to near-IR, when observed, can be easily ascribed to the contribution from a host galaxy and the effect of galactic extinction.

For our sample we find that the average spectral index of the non-thermal emission is $\langle\alpha\rangle = 1.08\pm0.06$. Moreover the X-ray selected objects exhibit a significantly (99% c.l. for a KS test) flatter spectra than radio selected ones.

For ~30% of the sources we have repeated observations. The optical and near-IR emission are strongly correlated and usually maintain the spectral index ($\langle\Delta\alpha_{max}\rangle = 0.17 \pm 0.04$) even under substantial flux variations. No evidence of correlation between α and flux level is observed. A full report of these observations is given elsewhere [1].

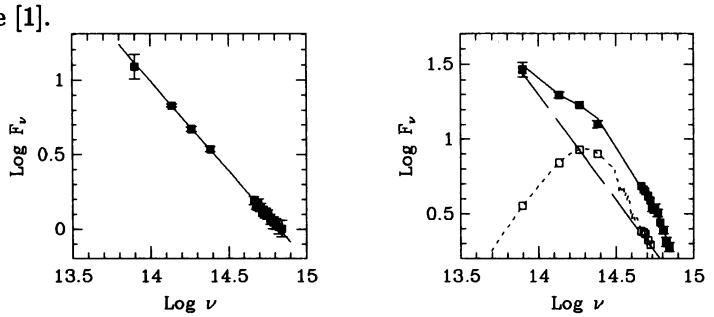

Fig. 1. Representative SFD for two objects: 0048–097 (left), and 0521–365 (right).

References

[1] Falomo R., Bersanelli M., Bouchet P., and Tanzi E.G. 1993, AJ, 106, 11

T. J.-L. Courvoisier and A. Blecha: Multi-Wavelength Continuum Emission of AGN, 321.