

## Characterizing X-ray Variability of TeV blazars

*jeudi 24 avril 2008 11:00 (45 minutes)*

### Summary

In this talk, I will briefly overview the synchrotron X-ray variability of TeV blazars by focusing how to extract “jet physics” from the observed light curves. Apparently, the light curve gives independent and complementary information to the spectral energy distribution, but surprisingly little attention has been paid especially for the blazar study. Various temporal techniques are given in literature, e.g., the discrete correlation function (DCF), the structure function (SF), and the power spectrum density (PSD) analysis, but special care must be taken if the data is not well sampled and relatively short compared to the variability time-scale of the system. For example, there was a beautiful paradigm that the soft X-ray variation of TeV blazars lag behind the hard X-rays by ~5 ksec, reflecting the difference of synchrotron cooling time-scale. However, the situation is being more and more complicated if we properly consider the effects caused by periodic gap in the light curve due to the Earth occultation (every ~ 6ksec). I will present detailed simulations to see how the “gap” and the “length” of the data affects the results of temporal analysis, and to what extent we can be sure of our results. I will also briefly present some recent highlights from Suzaku observations of TeV blazars.

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