

A unified time-dependant view of relativistic jets

jeudi 24 avril 2008 14:45 (45 minutes)

Summary

High quality, time resolved observations, of blazars at VHE energy allow detailed comparisons with time dependant models, especially when they are accompanied with simultaneous multiwavelengths campaigns. They provide then strong constraints on emission mechanisms. We will argue that recent data obtained on PKS 2155 favour a stratified jet model , where a perturbation propagates along the jet, producing correlated, but not simultaneous variability at various wavelengths. A stratified jet helps also lessening the constraints on gamma-ray opacity, since low energy photons can be emitted farther away in the jet and do not contribute to gamma-ray absorption. We will detail more specifically a model based on variable electron-positron pair creation at the base of a relativistic jet, and show that it can reproduce most of the features observed in multi wavelengths observations. The bulk Lorentz factors deduced from this models are significantly lower than those deduced from one zone models, but still higher than those deduced from previous FRI - BL lacs unification models. We will also discuss the implications of these results on the geometry of the jet.

Orateur: Prof. HENRI, Gilles