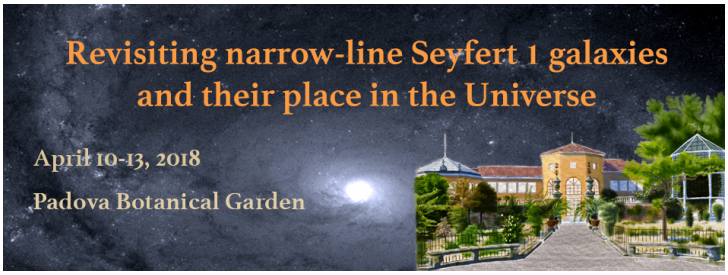

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Prospects for gamma-ray observations of narrow-line Seyfert-1 galaxies with the Cherenkov Telescope Array

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Gamma-ray emitting narrow-line Seyfert-1 (g-NLSy1) galaxies are jetted sources, harbour a relative low-mass black hole (10^6 - 10^8 Solar masses) which accretes close to the Eddington limit. g-NLSy1 galaxies show characteristics similar to those of blazars, such as flux and spectral variability in the gamma-ray energy band and radio properties which indicate the presence of a relativistic jet. These characteristics make them an intriguing class of sources to be investigated by the Cherenkov Telescope Array (CTA), the next-generation ground-based gamma-ray observatory.
CTA will cover the 20 GeV - 300 TeV energy range, with an average differential sensitivity a factor 5-20 better with respect to the current imaging atmospheric Cherenkov telescope (IACT) arrays. For transients/flaring events (time-scales of ~1 day or shorter) CTA will be about two orders of magnitude more sensitive with respect to Fermi-LAT at the overlapping energy of 25 GeV, allowing an unprecedented opportunity to investigate flaring g-NLSy1 galaxies.
We present preliminary results obtained by simulating a few g-NLSy1 galaxies by means of the CTA public ctools software and the public instrument response files, investigating their possible detection and spectral properties, taking into account both the effect of the extra-galactic background light in the propagation of gamma-rays and intrinsic absorption components.

Motivation

Grant

no

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