University of Crete
Department of Physics

FORTH INSTITUTE OF ASTROPHYSICS

Joint Physics & IA/FORTH Colloquium

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Blazars: A Lab for High Energy Astrophysics

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ABSTRACT

Active Galactic Nuclei (AGN) are the most luminous sources in the Universe. They are characterized by a rich phenomenology that includes compact nuclei, jets of relativistic plasma and non-thermal radiation that spans essentially all the observed E/M spectrum. Of special interest are blazars, a sub-category of AGN, that show, in addition to the above, strong emission in gamma-rays and fast variability that can, in some cases, be down to minutes. In addition, a recent observation by IceCube, the neutrino telescope operating at the South Pole, has made a tentative identification of blazars as possible high-energy neutrino sources. In the present talk I will try to connect all these seemingly unrelated features into a (more or less) self-consistent picture of blazars. I will also briefly discuss the role of so-called cosmic messengers that include not only the "traditional" photons, but also high-energy particles, neutrinos and gravitational waves in shaping Astronomy for the 21st Century.