

## **Cristina Nanci: The parsec-scale regions of candidate neutrino emitter blazar**

*Thursday, 9 June 2022 12:15 (20 minutes)*

Despite promising results based on samples of blazars already available, TXS 0506+056 remains the only case of a high-confidence association between a neutrino event and a gamma-ray blazar. Thanks to the high angular resolution reachable with the very-long-baseline-interferometry (VLBI), it was possible to identify peculiar properties related to the neutrino production in the TXS0506+056 jet, such as, for example, an apparent superluminal expansion of the core after the event and a decrease of the magnetic energy density after the neutrino detection. Both these characteristics have been explained by a conspicuous release of energy which is also likely responsible for the neutrino production in the source. In order to test the scenario of gamma-ray blazars as neutrino emitters, we are carrying out a follow-up program of candidate counterparts of neutrino events by means of VLBI observations. In doing so, we aim to retrieve any recurring features in the parsec scale regions of the candidates' jets potentially related to the neutrino production, as observed in TXS0506+056. We present our results for four events: our VLBI observations of the gamma-ray blazars in the neutrino event fields are compared with past archival VLBI data. In this talk, I will show some of the results of our first explorative VLBI follow-up campaign (Nanci et al. 2022) and I will introduce how the VLBI-CTA synergy will help to shed light on the hypothesis of the neutrino-blazar connection.