PhD Summer School on Neutrinos
Here, There & Everywhere
July 11-15, 2022
Niels Bohr Institute, Copenhagen

Contribution ID: **82** Type: **Oral**

IceCube Search for High-Energy Neutrinos from Obscured Sources in the Great Observatories All-Sky LIRG Survey (GOALS)

Monday 11 July 2022 14:24 (12 minutes)

Tension between the diffuse multimessenger observations of both neutrinos and gamma rays hints that the contribution of gamma-ray bright objects to the observed astrophysical neutrino flux is limited. This initiated the interest in gamma-ray dim objects, obscured by large amounts of dust and gas. In this work we investigate for the first-time ultra-and luminous infrared galaxies (U/LIRGs) within the Great Observatories All-Sky LIRG Survey (GOALS) as candidate neutrino sources. GOALS objects are among the brightest infrared sources in the Universe, powered by highly obscured starburst and AGN activity. These key features make GOALS objects excellent gamma-ray dim neutrino source candidates that can contribute to the neutrino flux measured by IceCube. A neutrino-production framework for U/LIRGs is developed with special focus on electromagnetic observables that can be linked to neutrino production. This phenomenological model will then be tested with a dedicated IceCube analysis on the GOALS sample.

Author: MERCKX, Yarno (Vrije Universiteit Brussel)

Presenter: MERCKX, Yarno (Vrije Universiteit Brussel)

Session Classification: Student Talks