



Neutrino Astronomy: From Dream to Reality

Date: September 13, 2023 (Wednesday)

Time: 10:00 a.m.

Zoom Online Lecture: <https://shorturl.at/wxy57>

Meeting ID: 962 1808 1400

Password: 2859



Prof. Naoko KURAHASHI NEILSON
Drexel University

Abstract:

The Universe has been studied using light since the dawn of astronomy, when starlight captured the human eye. The IceCube Neutrino Observatory, located at the geographic South Pole, observes the Universe in a different and unique way: in high-energy neutrinos. IceCube's discovery in 2013 of a diffuse celestial neutrino radiation, in other words, high-energy neutrinos from beyond the solar system, started an era of neutrino astronomy. Searches for astronomical sources responsible for creating these neutrinos have covered broad source types while combating background event rates that are 6 orders of magnitude higher.

This year, we announced the observation of our very own Milky Way galaxy in neutrinos. This is the first non-electromagnetic observation of our galaxy. But why did it take 10 years to observe our own galaxy after observing extragalactic neutrinos? What makes neutrino astronomy difficult? These questions will be answered, and the state of neutrino astronomy and its place in multi-messenger astronomy will be reviewed.

Biography:

Naoko Kurahashi Neilson is an associate professor in the Department of Physics at Drexel University, whose research centers on high-energy neutrinos, high-energy particle astrophysics and particle physics.

Kurahashi Neilson earned her PhD from Stanford University by listening acoustically to extremely high-energy neutrinos in the Bahamian ocean. Her undergraduate degree is from University of California, Berkeley.

Kurahashi Neilson received the National Science Foundation (NSF) CAREER award, and is among the junior physics faculty featured in the Symmetry magazine story, Get to know 10 early-career experimentalists. Kurahashi Neilson, who often gives public-facing talks about her research, is passionate about outreach and access to science at every level—including grades K-12, the general public and other segments—and is an advocate for an inclusive physics environment.

Anyone interested is welcome to attend!

Phone: 28592360 Fax: 25599152