

# Seminarium Astrofizyczne

wtorek 25 godz. 12:30

ul. Pasteura 7, sala 404

transmisja on line

<https://meet.goto.com/NCBJmeetings/seminarium-astrofizyczne>

Password: AstroSemi

**Dr. Subhrata Dey**

(National Centre of Nuclear Research, Warsaw)

## **Bridging the Gap: From UV/IR to Radio via SED Modeling of Infrared Bright Galaxies**

Luminous and Ultra-luminous Infrared Galaxies (U/LIRGs) are extreme star-forming galaxies, typically triggered by interactions or mergers of gas-rich galaxies. Their infrared emission is dominated by warm dust heated by active galactic nuclei (AGN) and starbursts, positioning them as a transitional phase between gas-rich galaxies and red, dead ellipticals. U/LIRGs offer a unique laboratory for studying the evolution from star-forming galaxies to elliptical galaxies.

In this seminar, I will discuss the global astrophysical properties of a sample of 25 infrared-bright galaxies, combining the SED modeling results of 11 nearby LIRGs ( $z < 0.04$ ) and 14 ULIRGs ( $z < 0.5$ ) across UV, IR, and radio wavelengths. The focus will be on bridging UV-IR and radio-only SED modeling, which have typically been studied independently. By combining these regimes, I aim to gain deeper insights into the physical processes driving galaxy evolution.

Additionally, we introduce a physically motivated approach to radio-only SED modeling, considering absorption at low frequencies and the complex nature of radio continuum emission originating from multiple star-forming regions with varying compositions or geometric orientations. I will also present our efforts to calibrate the radio continuum emission to derive the radio star formation rate (SFR), which serves as an extinction-free diagnostic of star formation activity.

Serdecznie zapraszam,

William Pearson, on behalf of the SOC