

Seminarium Szkoły Doktorskiej NCBJ

Thursday, 10 March, 9:00

<https://www.gotomeet.me/NCBJmeetings/phd-seminar>

Speaker:

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Title:

Star formation rate measurement in astrophysics

Abstract:

Star formation is one of the main mechanisms of energy production in the universe and one of the key processes that are linked to the evolution of galaxies. Over the past two decades we have witnessed an explosion of data from local and distant galaxies across the entire electromagnetic spectrum. These observations gave us an unprecedented picture of the star-forming activity in galaxies, the parameters it depends on (e.g. gas content, physical conditions in the interstellar medium, dynamical state of galaxies), and its evolution over cosmic time. The common denominator in all these studies is the use of diverse techniques for quantifying the recent star-forming activity in the different environments. The purpose of this talk is to provide an introduction of the methods used to measure the intensity of star-forming activity in galaxies (their star-formation rates), focusing on spectral energy distribution (SED) fitting methods and star formation rate evaluation from the galaxy X-ray emission. In this context, I will discuss my PhD project, dividing it into two parts: 1) how the upcoming Legacy Survey of Space and Time (LSST) data from the Vera C. Rubin Observatory can be employed, using SED fitting methods, to constrain the physical properties of normal star-forming galaxies (main-sequence galaxies); 2) Modeling of the X-ray emission and probing of X-ray luminosity versus star formation rate relation in galaxies.