Seminář Astronomického ústavu UK
Seminar of the Astronomical Institute of CU

→ úterý/Tuesday **20.8.2024** od/from **10:10**
→ posluchárna/lecture room **T1** (V Holešovičkách 2, 180 00 Praha)

Constraining the stellar initial mass function slope with galaxy chemical evolution

presented in English by: **Zhiqiang Yan**
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The element compositions of resolved stars formed at distinct epochs record the chemical evolution trajectory of a galaxy. As this evolution is influenced by the number of dead stars with different initial masses, the abundance profiles of stars offer a means to estimate the galaxy-wide stellar initial mass function (gwIMF). In addition, the gwIMF of long-lived low-mass stars shapes the observed stellar metallicity distribution of a galaxy, thereby allowing for the estimation of low-mass gwIMF via galaxy chemical evolution modeling. Our result suggests that dwarf galaxies, characterized by low stellar metallicities and low star formation rates, exhibits a bottom- and top-light gwIMF. This is consistent with those derived from independent initial mass function (IMF) estimation techniques including stellar population synthesis and star counting, illustrating a coherent and systematic IMF variation.

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