Contribution ID : **34** Type : **not specified**

Deciphering the Formation Scenarios of Blue Stragglers Using Asteroseismology

Tuesday, 20 October 2026 15:50 (15)

Modelling blue straggler stars (BSSs) is a challenging task because they undergo non-single-star formation and evolution. Several formation scenarios have been proposed, but disentangling which pathway is responsible for the formation of a given BSS is not straightforward.

Two steps could significantly improve our understanding of these intriguing objects. Firstly, we need observables and methods that can place stringent constraints on the internal structure and evolutionary history of BSSs.
This can be achieved by applying asteroseismology to pulsating BSSs (e.g. SX Phoenicis variables), by exploiting oscillation modes that carry information about otherwise inaccessible regions of stars.
Secondly, we need to identify as many pulsating BSSs as possible from observational data across a wide range of stellar clusters. The multi-colour photometry from the Legacy Survey of Space and Time (LSST) has great potential to advance studies of BSSs by providing excellent data for extracting pulsation frequencies and identifying pulsation modes.

Here, we present our current results from asteroseismic modelling of BSSs and discuss the prospects for identifying BSSs in various stellar clusters from colour–magnitude diagrams using the LSST passbands.

Presenter(s) : Prof. DASZYŃSKA-DASZKIEWICZ, Jadwiga (University of Wroclaw)

Session Classification : Session 8