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Probing the Power of Sonification for Asteroseismology

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Within the vast field of Astrophysics, the study of variable stars is expansive and inclusive. Groundbreaking discoveries can be made with modest instrumentation and small telescopes, also by amateurs, and treasure troves of new unexplored data are available to the scientific community and the public. Therefore, this field lends itself perfectly to involving more people in astronomical research, sharing a cosmic perspective on our human scientific endeavors, and using it as a "hook"for STEAM education.

AstroSounds is a citizen science project investigating the extent to which the human ear can distinguish the timbre of different pulsating star types. At the same time, it is an educational project inspired by the research field of asteroseismology, naturally linking different STEAM curriculum topics, such as physics, mathematics, biology, chemistry, and music education. The multimodal exploration of data, including the auditory channel, opens the field of astronomy to people with visual impairments.

In the successful pilot project of AstroSounds, which ran in Belgium from 2020 onwards and was funded by the Flemish government, numerous light curves, gathered with space missions and ground-based telescopes, were used for sonification.
In this contribution, I will briefly describe the work behind the scenes to set up our citizen science project and its STEAM education component, as well as the sonification method. Subsequently, I would like to exchange on potential synergies and avenues of collaboration with the CREDO network.

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Session Classification: Sonification of data, Citizen Science and Educational aspects of CREDO