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A new window on Interstellar Silicates

Tuesday, 12 June 2018 15:00 (35 minutes)

X-rays provide a powerful tool to study interstellar dust. Using X-ray binaries as background sources, we can investigate the intervening dust along the line of sight. This is done by observing the edges present in the spectra of these sources, that serve as a unique fingerprint of the dust (Costantini 2012).

In particular, the extinction features in the Si K-edge offer a range of possibilities to study silicon bearing dust, such as investigating the grain size distribution, crystallinity, abundance and the chemical composition along a given line of sight (Zeegers et al. 2017). The edge is modelled with unprecedented accuracy, as we include a total of 15 laboratory measurements of interstellar dust analogues.

Here we also present our results of 9 different lines of sight toward the Galactic plane and give a detailed mapping of the properties of the dust, unveiling the dust nature toward the central region of the Galaxy (Zeegers et al. 2018 in prep.).

Consider for a poster?

Yes

Primary author: ZEEGERS, Sascha (SRON)

Co-authors: Dr COSTANTINI, Elisa (SRON); Prof. TIELENS, Alexander (Leiden Observatory); Dr DE VRIES, Cor (SRON); Dr MUTSCHKE, Harald (Astronomical Institute and University-Observatory Jena)

Presenter: ZEEGERS, Sascha (SRON)

Session Classification: Observational constraints on dust properties

Track Classification: What is dust?