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Laboratory Measurements of the Far-Infrared to Millimeter Opacity of Carbonaceous Dust-Analogues

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We are measuring and analysing the FIR- and THz-Spectra of pyrolysed micro-crystalline cellulose as an analogue of carbonaceous interstellar dust. We are using cellulose-powder with crystal sizes of 50 and 20 µm and are heating it up to 1000°C. First results of the mass normalised extinction are presented and compared to Jäger et al. (1998) [1]. The temperature dependent measurements took place in a dry environment at room temperature (RT) down to the environmental temperature of Tenv = 10 K.

Our aim is to assess carbonaceous dust analogues in terms of structure, nature, and morphology.

For theoretical and observational investigation we are going to determine their optical constants.

Furthermore, we are going to calculate the emission cross section of particles with different geometry to compare them with the measured results.

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