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**Photophoretic motion of chondrules and other particles in the Solar Nebula.**

Wurm\*, G., Lösche, C., Teiser, J., \*Faculty of Physics, University of Duisburg-Essen, Lotharstr. 1, 47057 Duisburg, [gerhard.wurm@uni-due.de](mailto:gerhard.wurm@uni-due.de).

About 10 years ago photophoresis was suggested to play a role as “new” process to move particles in a protoplanetary disk. Specifically, this illumination based mechanism was suggested to concentrate and sort chondrules. During the last years this goal was pursued systematically and resulted in (1) new high accuracy equations for photophoresis [1], (2) quantification of the photophoretic force for chondrules based on x-ray tomography, drop tower experiments and numerical simulations [2, 3], and (3) recently the connection to heating events and temperature fluctuations in the Solar Nebula which might have formed chondrules [4].

I will report on these recent steps of its quantification and application to particle motion which brings photophoresis inside the optically thick nebula. It shows the potential to unify models of chondrule evolution after heating events and influence planetesimal formation in general.

[1] Loesche, C. (2015) Dr. thesis, Univ. Duisburg-Essen.

[2] Loesche, C. et al. (2014) ApJ 792, 73 1-9. [3] Loesche, C. et al. (2013) ApJ 778, 101 1-10. [4] Loesche, C. et al. (2015) ApJ submitted.

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Cite abstract as:

, (2015) . Paneth Kolloquium, Nördlingen (Germany), abstract URL:

<http://www.paneth.eu/PanethKolloquium/2015/0016.pdf> (abstract #0016).