



PhD Position in Planet Formation

(Reference number 09-17)

The Max Planck Institute for Astronomy in Heidelberg is seeking candidates for a PhD in Theoretical Astrophysics to work in the theory group for Planet and Star Formation with Hubert Klahr funded by the DFG via the Forschergruppe “FOR 759 - *The Formation of Planets: The Critical First Growth Phase*”.

Our Planets were built up 4.56 Billion Years ago from rocky and icy bodies called Planetesimals, very similar to the asteroids in the solar system. A very attractive way to form these kilometer sized Planetesimals in the early solar system is “Gravoturbulent Fragmentation” of a cloud of relatively small icy and dusty objects. We showed that turbulent concentration of centimeter to meter sized icy and dusty material leads to particle concentrations in which self gravity dominates over gas shear and tidal, thus the heaps of material collapse spontaneously under their own weight into many kilometer sized Planetesimals (Johansen et al. nature 2007). In the proposed project we aim to investigate the fate of such gravitationally unstable particle heaps by exploiting combined SPH and N-Body simulations on massive parallel compute clusters.

The PhD project will focus around numerical simulations using and extending the *GADGET* SPH-code. The numerical simulations shall be interpreted statistically and visualized on state of the art graphics hardware.

We expect a solid background in physics and programming skills. Beneficial will be previous experience with the *GADGET* code or a similar SPH implementation.

Please direct Inquiries and Applications to:

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and should include a CV, a list of marks of university examinations, a (current draft of) the masters thesis, and the email addresses of two senior scientists who would be willing to answer questions.

Applications can be sent both by post or by email. There is no strict deadline, but any applications sent in by January 15th, 2010 are assured to receive full consideration. The position could start as early as January, 2010 and is for three years. Salary is according to TVöD E13/2. The Max Planck Society is an equal opportunity employer.