



OTTO VON GUERICKE
UNIVERSITÄT
MAGDEBURG

FAKULTÄT FÜR
NATURWISSENSCHAFTEN

Seminar über Nichtlinearität und Unordnung in komplexen Systemen

Am Montag, dem **18. Juni 2018**, um 16:15 Uhr im Gebäude 16, Raum 154 (ehemals Bibliothek), findet der Vortrag von

Herrn Dr. Christian Scholz

(Heinrich-Heine-Universität Düsseldorf)

statt.

Vortragsthema: **Collective dynamics of self-spinning granular particles**

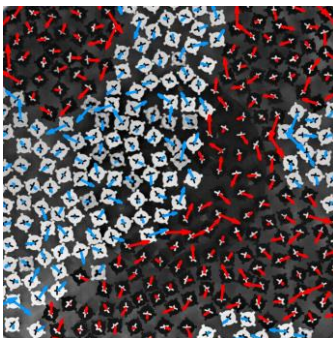
Abstract:

Biological organisms and artificial active particles self-organize into swarms and patterns. Varying the forms of activity and particle interactions opens up a broad range of novel collective phenomena.

A particularly simple and versatile system are 3D-printed robots on a vibrating table, called Vibrotbots. Here we demonstrate a system of self-spinning Vibrotbots. Monodisperse systems of such particles constitute a novel type of homogeneously heated granular gases, where energy is injected by the rotational degree of freedom[1]. Binary mixtures of clockwise and counter-clockwise spinning particles phase separate and exhibit collective ballistic motion along the interfaces[2]. We compare our experimental system to Langevin simulations to demonstrate that our macroscopic system is a form of active soft matter. Simulations also allow us to demonstrate that confinement in the system, on long time scales, favors symmetric demixing patterns.

[1] Scholz C., Pöschel T., Phys. Rev. Lett. 118, 198003 (2017)

[2] Scholz C., Engel M., Pöschel T., Nature Commun. 9, 931 (2018)



Interessenten sind herzlich eingeladen!

Magdeburg, den 11. Juni 2018

gez. Prof. Dr. Ralf Stannarius