

Physikalisches Kolloquium

Donnerstag, 07.07.2022, 16:30 Uhr – Hörsaal 5J

Glass Transition in Active and Passive Disordered Systems

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The physics of the glass transition is an age-old problem and the 2021 Physics Nobel Prize was awarded to Prof. Giorgio Parisi for his seminal work on disordered systems. Recently glassy behaviour in systems with active self-propelled particles has added a new dimension to this problem. Although it is not clear whether activity can help us in having a better understanding of the equilibrium glass transition problem, it definitely is generating a plethora of new phenomena.

In this colloquium, I want to talk about some of our works on glasses, but to celebrate the 2021 Physics Nobel Prize, I will start by giving a brief introduction to the works of my former postdoctoral mentor, Prof. Giorgio Parisi. I intend to talk about some of his important works like replica symmetry breaking in the context of spin glasses, and Monte Carlo techniques, in particular, the swap Monte Carlo method for understanding deep supercooled glassy states along with some of my own works in these directions. Then I will briefly discuss his seminal work on bird flocking which led to new insights in the field of active matter and active glasses. Finally, I will conclude by showing some of our recent results on active glasses.

**Ab 16:15 Uhr kollegialer Austausch im Foyer vor dem Dekanat der
Math.-Nat.-Fakultät (Gebäude 25.31. Ebene 00)**

**Für die Dozenten der Physik
Prof. Dr. Jürgen Horbach**