



# Münchner Physik- Kolloquium

Winter  
2018/19

## Supercomputer insights into the messy physics of galaxy formation

**Prof. Dr. Volker Springel**, *Max-Planck-Institut für Astrophysik, Garching*

Monday, 10 December 2018, 17:15 h

Hörsaal H 030, Fakultät für Physik der LMU, Schellingstraße 4, München

Hydrodynamical simulations of galaxy formation have now reached sufficient physical fidelity to allow detailed predictions for their formation and evolution over cosmic time. I review the foundations of this methodology and describe results from recent efforts to construct a new generation of cosmic structure formation models. These numerical simulations need to tackle a complex multi-scale, multi-physics problem. They now succeed in making accurate predictions for matter clustering on cosmologically relevant scales, while at the same time computing detailed galaxy morphologies, the enrichment of gas with heavy elements, or the amplification of magnetic fields during structure growth. They also show that supermassive black holes are crucial for setting the final life stages of galaxies.

## Student event: Meet the speaker

We invite you to a **student-only** discussion-round with Prof. Dr. Volker Springel before his Munich Physics Colloquium talk.

*Be curious and feel free to ask any question.*

Monday, 10 December 2018, 16:00 h

Room H 522 (5th floor), Fakultät für Physik der LMU, Schellingstraße 4, München

