

**SPECIAL
COLLOQUIUM**

THURSDAY

FEBRUARY 18

4:00 P.M.

RM 118 NSH

Refreshments
in Rm 202 NSH
@ 3:30 pm

Light-matter interaction: capturing electrons in action, with applications

Dr. Alexandra Landsman

Max Planck Institute for Physics of Complex Systems in Dresden

Over the past fifteen years, the field of ultrafast science has moved from its infancy to become a significant force not only in atomic, molecular and condensed matter physics, but also at the interface of multiple areas of fundamental and applied science that involve imaging and control of electron dynamics. Its aims are both fundamental (such as observing electrons tunnelling out of atoms and molecules) and practical (such as controlling chemical reactions by steering electrons, or increasing the speed of information processing, or early detection of cancer). In this talk, I will review the state-of-the-art in ultrafast science, focusing particularly on future directions and still open questions. Examples from my recent work will illustrate how improved theoretical tools can be used both to understand experiments in light-matter interaction and to design new ultrafast laser sources.