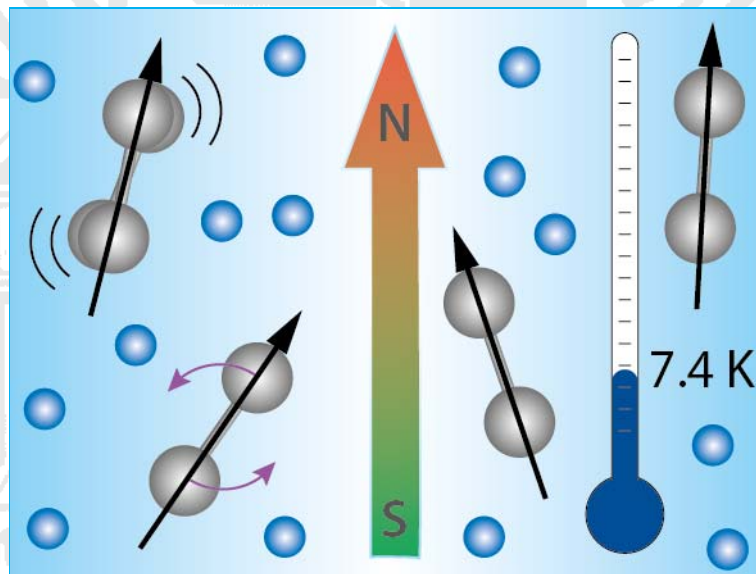




SONDERKOLLOQUIUM

AM 10. FEBRUAR 2017 UM 12:00 UHR

IM SEMINARRAUM, GUSTAV-MIE-GEBÄUDE



Synchrotron spectroscopy of size-selected free clusters, molecules, and complexes: Understanding and controlling electronic states and magnetic moments

DR. TOBIAS LAU

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This talk will treat the development and application of cryogenic ion traps as new experimental tools for x-ray spectroscopy to investigate magnetic and electronic properties of size-selected nanoscale matter. Radio-frequency ion trapping, in combination with an applied magnetic field, has uniquely enabled us to apply x-ray magnetic circular dichroism spectroscopy to highly dilute gas-phase targets. Initially designed for the study of "classical" problems in metal clusters, such as the size-evolution of spin and orbital angular momenta, we have recently turned our attention also to molecular ions and to ionic complexes. This requires sample preparation that allows for full control of composition, size, and ligands down to the level of single atoms. Even though well-established by now, this technique is by no means exhausted and further possibilities will be sketched.