



Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich
Laboratorium für Physikalische Chemie

**Einladung zu einem Seminar über Theoretische Chemie,
Molecular Spectroskopie und Dynamik
Hörsaal HCI J 4
ETH Zürich, Höggerberg**

Datum/Zeit: **Freitag, 14. März 2014, 16.45 Uhr**

Referent: **Prof. Dr. Pierre Pillet**
Laboratoire Aimé Cotton, CNRS, Université Paris-Sud and
ENS Cachan, France, Currently Invited Professor at the LPC

Thema: **Two-, three-, four-, and many-body effects in a cold
Rydberg-atom sample**

Excitation of an ensemble of cold atoms to Rydberg states creates configurations where the atoms interact with each other at very large distances, up to 10 μm or even more. Over the timescale associated with the interactions, the atoms remain stationary and the atom sample can be regarded as a frozen Rydberg gas. A frozen Rydberg gas offers the opportunity to observe three- or four-body interactions, and to systematically investigate the interplay of two-body and many-body effects and their influence on the dynamics of a cold atom gas. The control of the relevant interactions and dynamical processes is relevant in the context of applications of Rydberg atoms in quantum simulation and quantum engineering.

Gäste sind willkommen.

Prof. Frédéric Merkt
Prof. Martin Quack
Prof. Markus Reiher
Prof. Ruth Signorell
Prof. Hans Jakob Wörner