Joint LLC Seminar

Thursday November 10, 15:15
The Rydberg Lecture Hall, Dep. of Physics

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Ultrafast nonlinear imaging for combustion:
Ultrabroadband coherent Raman imaging and sum-frequency scattering

In recent years, ultrafast laser technologies and spectroscopic techniques have been utilized for new, more powerful, techniques in the field of optical combustion diagnostics. These developments have allowed us to pursue some of the most stubborn and experimentally challenging problems in combustion science, such as probing high pressure environments and important interfacial combustion processes. In this talk I will present an overview of these recent developments, and discuss current projects in our laboratory. In particular, I will focus on the development of coherent Raman imaging strategies in the gas phase. As combustion is inherently a three-dimensional and spatially correlated process, detailed comparisons to numerical simulations require a higher degree of dimensionality in the measurement. Ultimately, our aim is to provide new insights into the chemical mechanisms of flame-wall interactions and soot growth and oxidation which will inform combustion chemistry models and increase the fidelity of predictive numerical simulations of combustion devices, chemistry, and processes. In turn, such developments will lead to reduced pollutant formation, such as soot and unburned hydrocarbons, in practical devices.

The seminar is suited for a broad audience and open for everybody

The Rydberg Lecture Hall is located at the Department of Physics, Professorsgatan 1

Coffee and refreshments will be served before the seminar, from 15:00

Lund Laser Centre