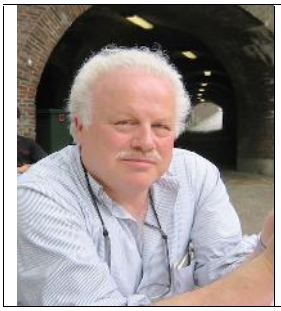
XXXIV kolokvijs

Laiks: ***Ceturtdiena, 20.06.2013.****, plkst.9..00 – 10.30*
Vieta*:* **LU ASI**, Šķūņu 4. auditorija, 4. st.
Vadītājs: **A. Ekers**

10.0 – 10.15. Dr. A.Ekers. Ievadvārdi un referentu cildināšana (*Welcome address*)
10.15 - 11.00. Prof. Harold Metcalf, Stony Brook University "Efficient Excitation of Rydberg States Using STIRAP"

"There are reasons why it's desirable to put all the atoms of a sample into the Rydberg states, leaving none in the ground state. This talk will begin with a description of our nano-lithography experiments with meta-stable helium that motivate such a need, then discuss our spectroscopy and measurements of the Rydberg states, and continue on to present our technique for the absolute measurement of STIRAP efficiency. Since perfect adiabaticity is only an ideal, some real-world considerations that impact on the non-adiabaticity of experiments will be discussed. Finally there will be a presentation of our preliminary results of internal state atom interferometry."



Harold J. Metcalf, a Physics professor at Stony Brook University, is the man behind the project. Metcalf and his students perform basic research that has no attainable end product. "We use lasers to shine on beams of atoms, to make atoms do what we think would be interesting to make them do," he said.

To further his educational goals, Metcalf helped launch the Laser Tea Center at Stony Brook over 12 years ago, which hosts undergraduate an school students to conduct hands-on optics and laser research projects

In the late 1960's, our early work with N2 pumped dye lasers was precision measurements in atoms. Later we studied the OH free radical and the Stark effect in Rydberg atoms. Laser cooling work began in 1981 and was extended to sub-Doppler cooling, quantum states of motion, dark states, and magnetic effects. More recently we focused on ultra-strong optical forces with a huge velocity capture range provided by non-monochromatic light. These forces were recently exploited for atomic nanofabrication.
Metcalf has had several Visiting Professor appointments including MIT, École Normale Supérieure, Ben Gurion, Utrecht, and others.

11.00 – 11.30 Jautājumi, diskusija un kafija
(Questions, comments, discussion and coffee)