学 术 讲 座

报告题目: Scattering and absorption of molecules in the Earth's atmosphere

报告人: Prof. Wim Ubachs

Department of Physics and Astronomy
Vrije Universiteit Amsterdam, The Netherlands

邀请人: 梁琨 电子信息与通信学院 副教授

报告时间: 2017 年 11 月 6 日（星期一），上午 9 点

报告地点: 南一楼 中 302

Abstract:

Laser-based techniques will be described to detect and characterize the optical properties of molecules, in particular those with relevance for the Earth's atmosphere. Cavity ring-down spectroscopy is a very sensitive method to monitor absorption spectra of molecular resonance lines, but also to quantify Rayleigh scattering and effects of collisions between molecules. Where the method includes deep-ultraviolet radiation the onset of dissociation of molecules can be investigated, of importance for the chemical dynamics in the atmosphere. Rayleigh-Brillouin scattering spectroscopy provides information on the collisional dynamics in gases.

Biography:

Wim Ubachs is Professor of Atomic, Molecular and Laser Physics in the Department of Physics and Astronomy at the Vrije Universiteit in Amsterdam. He obtained his PhD degree in 1986 from the University of Nijmegen, for a thesis entitled: High Resolution Laser Spectroscopy on Diatomic Hydrides. In 1986 he was a visiting scientists at the Dalian Institute of Chemical Physics (China) and in 1987-1988 he was a Post-Doctoral fellow at the Department of Chemistry at Stanford University (USA) in the group of Prof. R.N. Zare.

Since 1988 he is with the Vrije Universiteit in Amsterdam, since 2003 as a Full professor. In the period 2001-2004 he has held a part-time Professorship at the Eindhoven University of Technology, and in 2002 he has held a Guest Professorship at ETH Zürich, at the Laboratorium für Physikalische Chemie. In summer 2006 he was a Guest Professor at the Tokyo University of Science.He is fellow of the American Physical Society and received a prestigious European ERC-Advanced grant in 2015.His research interests are in Laser Spectroscopy, and in the development of advanced laser sources, particularly at short wavelengths in the domain of the extreme ultraviolet. Besides that he has an interest in molecular atmospheric physics, in molecular astrophysics, and is now pursuing a research line in the field of metrology. For the past six years he has become deeply involved in the issue of drifting fundamental constants.

He has given invited lectures at many international conferences and was co-author on some 300 scientific papers (see http://www.nat.vu.nl/~wimu/PUBS.html).