Optical Properties of Atmospheric Aerosol by Laser tweezers: A CASE studentship with Rutherford-Appleton Laboratory

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Project Description:

Atmospheric aerosol is responsible for scattering sunlight back to space and acting as cloud nucleation particles (CCN) vital for cloud formation. Changes to the chemistry and optical properties of clouds and aerosol can cause large changes in modern climate change. You will use laser trapping and Mie scattering from reacting particles to trap atmospheric aerosol and monitor their refractive index, CCN potential and size change with atmospheric oxidation. You will model these changes with radiative-transfer code to calculate the change in planetary reflectivity (albedo) and calculate a potential radiative forcing for modern climate change.

There will be the opportunity to considerably improve the technique with the study of Mie scattering from multiply trapped and unusually shaped particles - The Mie field of one particle should affect the other. There could be a large atmospheric effect here - similar to the O₄ collision complex in the atmosphere.

You will be based at the Internationally acclaimed laser for science laboratories at Rutherford-Appleton Laboratories in Oxfordshire as part of this CASE award. These are bleeding edge laboratories and offer a mature work environment with excellent opportunities to network in an international and professional institute. The advertised opportunity is the 5th instance of this collaboration with the previous students producing up to 5-6 papers in leading journals.

The position would suit a person with a strong physical science background and the candidate would be expected to conduct experiments in laser science, script and program for experimental control and data analysis. The candidate would also be expected to attend winter and summer schools and conferences in international locations.

Details on how to apply can be found here [www.rhul.ac.uk/studyhere/postgraduate/applying](http://www.rhul.ac.uk/studyhere/postgraduate/applying)
Please contact the Postgraduate Programmes Co-ordinator, if you have additional questions about the department or application procedures (email: pgadmin@es.rhul.ac.uk; tel: 01784-443581).
Applicants are requested to send an additional copy of their CV directly to the lead supervisor of the project in which they are interested. Please also contact the supervisor if you have any questions about the project itself.