



Postdoctoral Engineering Fellowship in France at INRA, Bordeaux

Developing laser spectroscopy systems to measure soil-atmosphere exchanges of CO¹⁸O and COS in the lab and field

Rationale: Rising CO₂ and temperature combined with changes in water availability will modify terrestrial ecosystem photosynthetic uptake and respiratory losses in the near future, but it still remains unclear to what extent. Complementary tracers of the carbon cycle, such as the oxygen isotope composition of CO₂ and carbonyl sulfide (COS) can provide novel insights on ecosystem processes and help constrain large-scale CO₂ budgets. However, mechanistic understanding of how environmental and ecological conditions regulate the exchange rates of these tracers between soils and the atmosphere is currently unknown.

Methodology: In this context we seek a highly motivated candidate to develop automated laboratory and field-based laser spectroscopy systems to measure the fluxes of CO₂, water vapour, oxygen isotopes and COS between the soil and atmosphere using chamber and climate-control techniques. Depending on the interests of the applicant we would strongly encourage contribution to the analysis, publication and presentation of results at the international level.

Experience: The successful candidate will have a PhD or engineering degree, or equivalent experience as a senior technician. The candidate will have an expertise in the design, calibration and implementation of experimental gas exchange systems, programming skills for the control of experiments and data analysis, and a proven ability to work in a team. A background and experience of applying Isotope Ratio Mass Spectrometry or Laser Spectroscopy techniques to investigate environmental problems would also be highly desirable. The candidate must be willing and able to conduct work in the field with international collaborators and be available to travel abroad frequently for short term field campaigns. The postdoc will also demonstrate a competence in communicating in both French and English. A clean driving licence will also be necessary.

Wider Context: The successful candidate will be a key member in a new ERC team based in Bordeaux that will contribute to a quantitative description of CA activity in ecosystems and at the global scale. This interdisciplinary postdoctoral position offers exciting opportunities to generate unique and comprehensive datasets at the interface of atmospheric science and soil microbiology, that will lead to a greater understanding of carbon cycling on Earth. This position offers an experience to work within a dynamic and internationally recognised team working on isotope biogeochemistry and functional microbiology and an opportunity to develop a network with many international collaborators.

Application: Please send your application (CV, letter of motivation, research interests and expertise, list of publications and the names and contact information of two referees) to Lisa Wingate (see below). A 1-yr contract is available immediately from the 1st February 2014 and is renewable for up to 3 years. Salary follows national directives and is adjusted for work experience.

For further information please contact:
Dr Lisa Wingate (lisa.wingate@bordeaux.inra.fr)



European Research Council
Established by the European Commission

