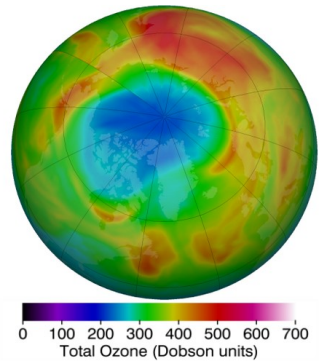
PhD position in Stratospheric composition and impacts on predictability



Fascinated by the ozone layer and how it affects climate? Intrigued by its potential role as a source of predictability? Motivated by teamwork?

Then consider a PhD position at the Instituto de Geociencias – Spanish National Research Council (IGEO-CSIC) within the EU project entitled "Stratospheric cOmposition in a changing CLIMate: drivers and mechanisms (SOCLIM)", funded by the European Research Council (ERC).

The ozone layer plays a key protective role for the biosphere as it filters harmful UV radiation from the sun. It also plays a crucial role in shaping stratospheric climate. However, its representation in numerical models is often simplified, especially in those used for weather forecasting, due to the excessive computational cost of atmospheric chemistry. Also, stratospheric ozone and other constituents have generally been considered as passive tracers, simply responding to changes in the atmospheric circulation and chemistry, without in turn affecting the large-scale circulation and surface climate. Recent evidence, however, shows that stratospheric composition plays an active role in shaping climate, including that of the Northern Hemisphere. Arctic ozone varies from year to year, and these fluctuations may represent a (untapped) source of predictability.

During your PhD, you will explore the two-way interaction between stratospheric composition (Arctic ozone and water vapor among others) and the atmospheric circulation, with focus on their relevance for forecasting on sub-seasonal to seasonal time-scales (S2S). You will work with existing data from model simulations, satellites, and perform your own numerical simulations with the S2S forecasting system from ECMWF. Within this scope, we will guide you in designing specific research questions that take your own ideas and interests into account.

We are looking for a curious and enthusiastic candidate who is fascinated about atmospheric dynamics, who would like to do modeling, analyze scientific data and enjoys scientific discussions. As a suitable candidate, you may come from a range of backgrounds including, but not limited to, Physics, Atmospheric Science, Chemistry, Computer Science and Applied Mathematics. Some programming experience would be highly desirable, ideally including data analysis and visualization (e.g., in python).

We offer a full 4-year PhD scholarship. Salary Range: 21.000 – 23.870 € gross (per year).
The position will be based at IGEO-CSIC in Madrid (Spain) under the supervision of Dr. Gabriel Chiodo. Extensive collaboration with several partners is foreseen, such as Universidad Complutense de Madrid, Université de Lausanne (Switzerland) and ECMWF (Bonn, Germany and Reading, UK).

For more information about the project, visit: https://www.gabrielchiodo.com/projects/soclim
Please send your application to: gachiodo@ucm.es

Please, provide your Curriculum Vitae and one Cover Letter along with two References. Your application will be given full consideration if you apply by **26. June 2024**.

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European Research Council

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