

[Inicio](#) > SORS/WomenInBSC: The Iron Jigsaw: Modeling the Impact of Deserts, Wildfires, and Climate Change on the Iron Deposition into the Oceans

SORS/WomenInBSC: The Iron Jigsaw: Modeling the Impact of Deserts, Wildfires, and Climate Change on the Iron Deposition into the Oceans

Objectives

Abstract: The environmental conditions of Earth, including its climate, are shaped by a multitude of physical, chemical, biological, and human interactions. This intricate framework constitutes the 'Earth system', a complex system characterized by nonlinear responses, thresholds, and interdependencies among its diverse components. Among these components, the iron cycle plays a crucial role. Iron, emitted into the atmosphere from sources such as soil dust, wildfires, and fossil fuel combustion, is transported from land through the atmosphere and deposited into the oceans. Soluble iron deposition significantly impacts ocean biogeochemistry, directly affecting the ocean carbon sink and, consequently, the global climate. In this study, we employ numerical Earth System Models and High-Performance Computing infrastructures to improve our understanding and quantify the atmospheric supply of bioavailable iron to the ocean below past, present and future climate.

Short Bio:



Elisa Bergas-Massó is a third-year Ph.D.

student in the Environmental Engineering Program at the Universitat Politècnica de Catalunya. Currently, she conducts her research in the Atmospheric Composition group of the Earth Sciences Department at the Barcelona Supercomputing Center (BSC). Elisa obtained her BSc in Physics from the Universitat de Barcelona in 2018 and an MSc in Meteorology from the same university in 2019. During her MSc degree, she completed an internship in the Atmospheric Composition group at BSC, where she focused on mineral dust emissions. Since September 2020, her Ph.D. work has been centered around the iron cycle and its impact on the climate system.

Speakers

Speakers: Elisa Bergas-Massó, third-year Ph.D. student in the Environmental Engineering Program at UPC and Atmospheric Composition Group First Stage Researcher, ES, BSC.

Host: Maria Gonçalves Ageitos, Atmospheric Composition Group Established Researcher, ES, BSC

Barcelona Supercomputing Center - Centro Nacional de Supercomputación

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