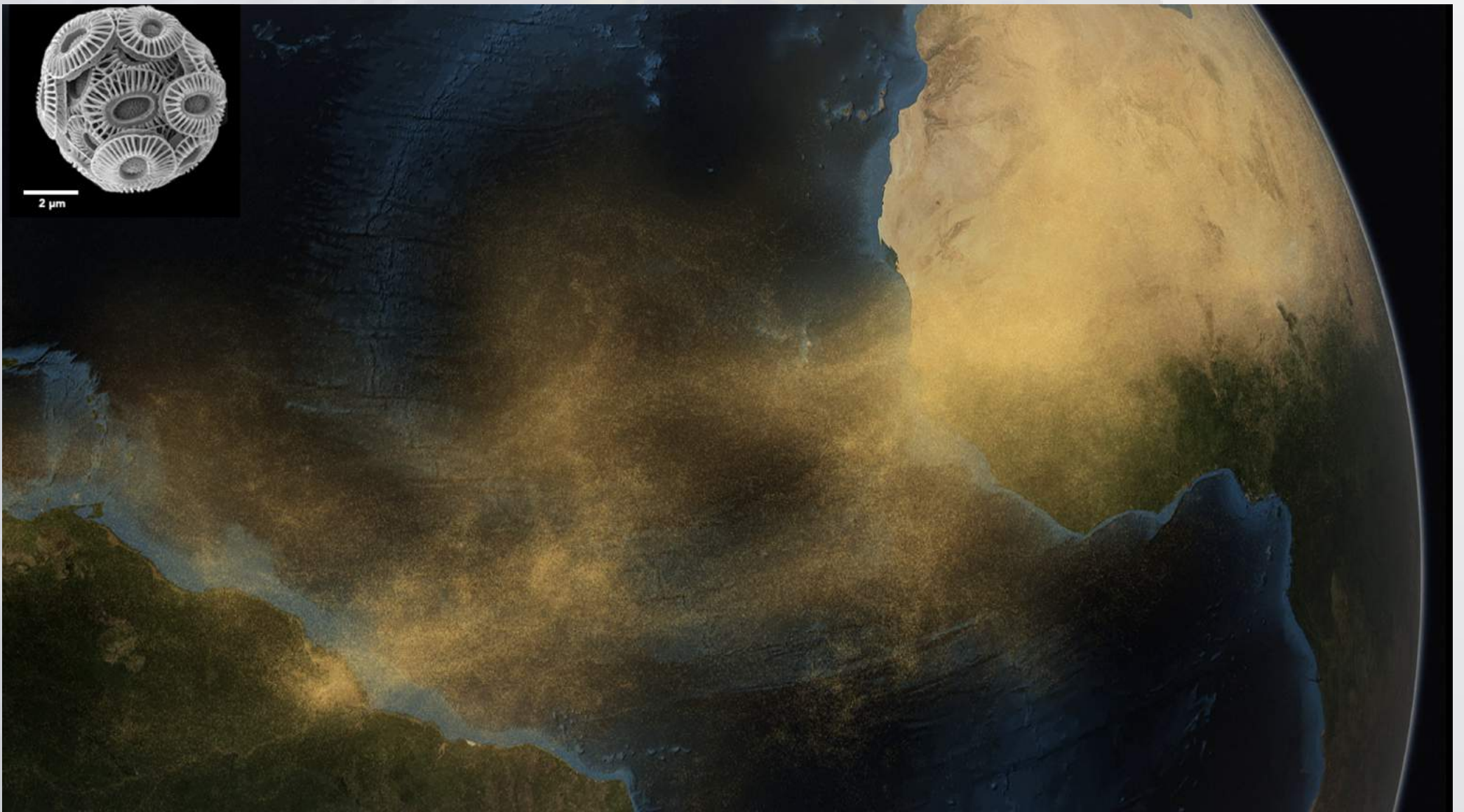


# SOLID EARTH SEMINARS

## INFLUENCE OF DUST ON COCCOLITHOPHORES SPECIES BETWEEN NW AFRICA AND THE CARIBBEAN: IMPLICATIONS FOR THE BIOLOGICAL CARBON PUMP



Ongoing climate warming is likely to hamper marine phytoplankton productivity by reducing the supply of nutrients from deep waters to the euphotic zone, with cascading effects for the regulation of atmospheric CO<sub>2</sub> via the “biological carbon pump”. However, massive amounts of tiny dust particles originating from continental and transported by the wind are known to carry nutrients that are essential to fuel primary production in the ocean. The so-called “Fe hypothesis”, arguing that Fe input by dust has played a major role in stimulating phytoplankton production in the past, leading to a significant drawdown of CO<sub>2</sub> during glacial times, has been extensively confirmed by ocean fertilization experiments over the last decade.

Amongst marine phytoplankton, coccolithophores are the main primary producers covering their cells with tiny calcite plates (the coccoliths), through a biogeochemical process that incorporates carbon in calcite and releases CO<sub>2</sub> into the environment. By crucially contributing to modulate the “rain ratio”, a key parameter for biogeochemical models exploring the long-term efficiency of CO<sub>2</sub> drawdown, any dust-driven changes in their productivity will surely contribute to change the Earth’s climate. In this seminar, Catarina Guerreiro will present recent evidence supporting the hypothesis of Saharan dust acting as a fertilizer for coccolithophores in the tropical North Atlantic, and how this is likely to contribute to counterbalance the projected weakening of the “biological carbon pump”.

**ZOOM**



WHAT'S THIS  
ABOUT?

### Catarina Guerreiro

(Marine and Environmental Sciences Centre at  
Uni-Lisbon, Portugal)

**January 19**

**Wednesday: 13:00**

**PASS: 2021\_RG234**

<https://videoconf-colibri.zoom.us/j/89018419156>