

Plenary Talk

PV XI Fri 9:00 PV-Rooms

The Oceans in a Warming World: How are the oceans changing and what role do they play in climate change? — ●JOHN

MARSHALL — Massachusetts Institute of Technology, Cambridge, MA, USA

Due to its enormous heat capacity and ability to move heat around the globe, the ocean plays an out-sized role in climate and climate change.

The ocean is at the center of contemporary questions such as:

- Why have global-mean surface temperatures not warmed in the last

decade, despite CO₂ continuing to rise in the atmosphere?

- Why is the Arctic losing sea-ice but not the Antarctic?

- Will ocean currents such as the Gulf Stream change?

- How much might sea-level rise this century?

- How might life respond to the ocean becoming ever more acidic as CO₂ dissolves into it?

In this discussion we will touch on some of the above questions and review how scientists observe patterns of warming propagating down in to the ocean's interior, how the ocean is responding to that warming, what we think the future holds and why.