

# SOLID EARTH SEMINARS

**SEDIMENTARY FLUID ESCAPE STRUCTURES (MUD VOLCANOES, POCKMARKS, COLD SEEPS, GAS HYDRATES AND MDAC) AND THEIR ROLE IN THE GLOBAL CARBON CYCLE: SOURCES AND SINKS**



**WHAT'S THIS  
ABOUT?**

Mud volcanoes, pockmarks and cold seeps are surface manifestations of the migration and escape of fluids in sedimentary basins. These fluids are enriched in methane and other hydrocarbons, generated through microbial and/or thermogenic processes. This methane can be temporarily stored at shallow depths within the sediments in the form of metastable gas hydrates, in the form of authigenic carbonates, or can be consumed through methanotrophs or oxidized (aerobically or anaerobically). However, episodically methane can escape into the seawater or into the atmosphere. Episodes of active methane escape are observed in many mud volcanoes, pockmarks and cold seeps, however the quantification of the fluxes is difficult and limited to the periods of observation. Therefore, proxies that allow the reconstruction of these processes are fundamental. In this talk, I will discuss the role of carbonate authigenesis and how changes in the gas hydrates stability can act as sinks or sources of Carbon into the seawater.

**ZOOM**



**Vitor Magalhães**

(IPMA, Portugal)

**June 2**

**Wednesday: 13:00**

**PASS: 2021\_RG234**

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