



Chemical & Physical Sciences

UNIVERSITY OF TORONTO

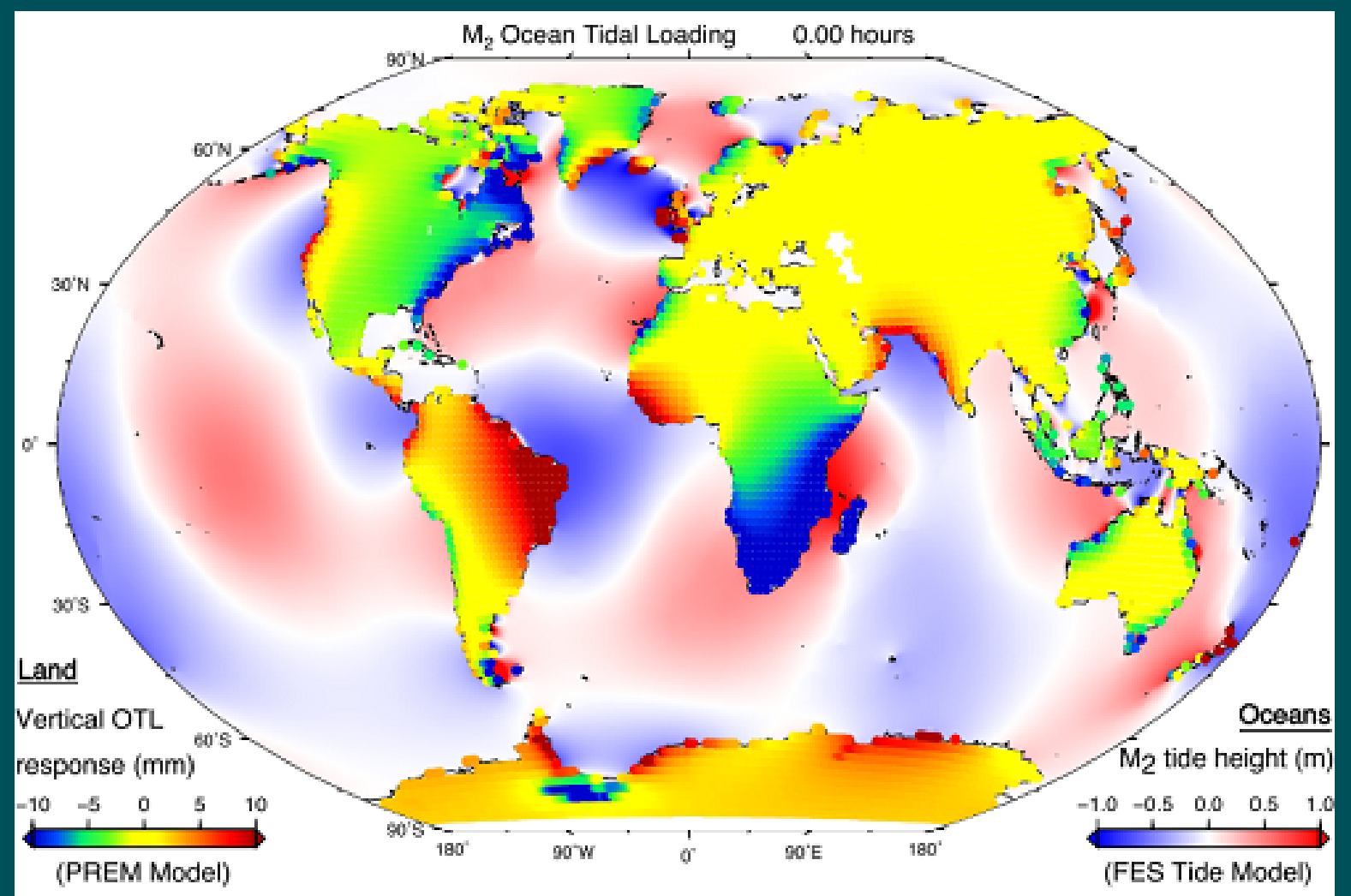
MISSISSAUGA

## COLLOQUIUM SEMINAR SERIES

# TRACKING WATER RESOURCES AND CONSTRAINING EARTH STRUCTURE WITH SPACE GEODESY



**Professor Hilary Martens,**  
Department of Geosciences,  
University of Montana



Fluctuations in surface pressure associated with circulations of Earth's fluid envelopes cause the shape of the solid Earth to distort on timescales ranging from sub-daily to inter-annual. The manner of distortion can shed light on important Earth-system processes, including the distribution of valuable freshwater resources in both surface and subsurface reservoirs. For well-known loads, such as the ocean tides, studying Earth distortion from surface loading can also place key constraints on allowable models for the mechanical and density properties of Earth's crust and mantle. This presentation will explore state-of-the-art methods for measuring and modeling Earth deformation caused by the redistribution of surface fluids in the oceans, atmosphere, and over land areas. Applications range from quantifying groundwater loss during periods of extreme drought to advancing understanding of geodynamics.

**Colloquium Seminar Series**

**Wednesday, October 27, 2021**

Join us on Zoom at 3:10pm

<https://utoronto.zoom.us/j/84409166490>