



ATOC COLLOQUIUM

Welcome!

Please join us for the next ATOC Colloquium on **Friday, Sept. 26** from **11:00 AM–12:00 PM**, which will be held in **SEEC S228** and simulcast over **Zoom**. This week's colloquium features Dr. Lori Bruhwiler from NOAA Global Monitoring Laboratory.

The Global Budget of Atmospheric Methane: Challenges and Opportunities

Observations continue to indicate rapid growth of atmospheric methane. Changes in observed isotopic composition of atmospheric methane suggest that microbial sources are responsible for most of the atmospheric growth, but discriminating between anthropogenic and natural emissions is problematic. Limiting growth in methane emissions likely will increase chances of limiting global temperature increases to 1.5 °C and also have positive impacts on human health through air quality improvements. However, given that the most feasible methane emissions reductions are in the oil and gas sector, it will be difficult to achieve the goals of the Global Methane Pledge, which aims to reduce global anthropogenic emission by 30% by 2030, with current signatories without also addressing agriculture and waste emissions. Mitigation of methane emissions will require us to understand how global emissions are partitioned between fossil and microbial sources, as well as the relative contributions from the agriculture and waste sectors. Detection of climate feedbacks from permafrost carbon and warming wetlands is also important, especially if policy adjustments are needed to counteract increasing natural emissions. Atmospheric data assimilation and flux inversion systems are now being considered for formulation of methane emission policy, and we consider how this could be done given uncertainties arising from chemical sinks, biased priors and transport models, and sparse observations.



Zoom: <https://cuboulder.zoom.us/j/4713174822?omn=99341251732>

Passcode: ATOC

About the ATOC Colloquium

The Department of Atmospheric and Oceanic Sciences (ATOC) Colloquium is typically held **every other Friday** from **11:00 AM–Noon**. Colloquia alternate between the following formats: (A) Full-length talk by a faculty member or invited speaker, (B) Three conference-length talks by graduate students. If you would like to nominate a speaker (including self), please email the ATOC Colloquium Committee Chair, Prof. Jianghanyang (Ben) Li (Jianghanyang.li@colorado.edu). Please visit www.colorado.edu/atoc/colloquium for further details.