

**A New Year-Round Weather Regime Classification for
North America
Simon H. Lee (Columbia University)**

Abstract:

Weather regimes have been widely adopted in Europe for a broad range of purposes, including analysis of atmospheric dynamics, predictability and climate change, to applications in the energy sector. However, regimes are comparatively under-utilised in North America, and there has been some inconsistency with their definitions in the literature.

In this talk, I will present some recent work in which we rigorously define a new set of weather regimes for use year-round over the North American continent, incorporating relevant aspects of Pacific and Atlantic variability. The regimes show notable trends in their frequencies, particularly in the recent prevalence of the Greenland High during summer (including this year). Case studies demonstrate potential links between these regimes and extreme events. Furthermore, the new year-round definition provides a consistent framework for the analysis of regime-dependent severe convective weather likelihood and its extended-range predictability.