



MPAS Modeling of an Antarctic Mass Loss Event

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Within a week from late June to early July 1988, average surface pressures over the whole of Antarctica dropped significantly. Reflecting widespread mass loss, and occurring within the Southern Hemisphere's Semiannual Oscillation (SAO), the pressure changes were observed in conjunction with outflows from broad sections of the continent. Strong offshore lows reinforced climatological katabatic flows, and in particular enhanced a vigorous Ross Ice Shelf Air Stream (RAS). Using datasets available at the time, the work of Parish and Bromwich (1998) [MWR, 126, 199–209] identified the event and reported its attributes. With both a modeling capability—MPAS— and more-accurate reanalyses nonexistent almost three decades ago, this case is now re-examined through a relatively high-resolution simulation. MPAS is run globally with regional refinement over Antarctica and the high southern latitudes. The model simulation, along with contemporary reanalyses, yields a clearer picture of the episode's elements and synoptic environments. It is found that MPAS can reproduce a major Antarctic mass loss event, revealing pressure changes significantly greater than originally diagnosed and illuminating hemispheric impacts, while enabling detailed examination of the characteristics and mechanisms of the phenomenon.

WEDNESDAY, 10 September 2025, 3:00PM

Refreshments 2:45PM

Please also join colleagues for refreshments and informal discussion after the seminar until 4:30PM

NCAR-Foothills Laboratory, 3450 Mitchell Lane

FL2-1001, Small Seminar

Seminar will also be live webcast

<https://sundog.ucar.edu/public/page/MMM>

Participants may ask questions during the seminar via Slido.