Annotated Bibliography

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Mattingly et al. (2018)

Detailed analyses of Atmospheric River impacts partitioned by season, area of intersection with Greenland Ice Sheet, and strength of moisture transport. Self-Organizing Map classification and conventional object-based Atmospheric River identification algorithm to identify moisture transport events.

Data:

1. "integrated vapor transport" data from MERRA-2 atmospheric reanalysis dataset, 1980–2016.
2. MAR 3.8 climate model (total melt, snowfall, surface mass balance, surface temperature).
3. National Snow and Ice Center MEaSUREs Greenland surface melt daily dataset, 1979–2015.

Results:

1. AR in different locations associated with different NAO phases.
2. Change in AR locations between 2000–2009, 2010–2012, 2013–2016.
3. Different effects depending on W vs E AR.

Discussion:

1. Relation to NAO, blocking, extratropical cyclones, Rossby wave breaking.
2. Uncertain relation to cloud cover per se.

Mattingly et al. (2018)

References

Mattingly, K., Mote, T., & Fettweis, X., 2018. Atmospheric River Impacts on Greenland Ice Sheet Surface Mass Balance, *Journal of Geophysical Research: Atmospheres*, **123**, 8538–8560, doi: 10.1029/2018JD028714.