P32 Analysis of wintertime mesoscale winds and turbulent fluxes around Southeastern Greenland

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The strong, mesoscale tip jets and barrier winds that occur over the oceans near southern Greenland have the potential for strongly impacting ocean circulation, particularly deep convection. However, the variability in known wind patterns and how this variability might be important for driving an ice-ocean model has not been investigated. Analysis using the self-organizing map (SOM) technique was performed using winter (NDJFM) 10 m wind data from the European Center for Medium Range Weather Forecasts Interim Reanalysis (ERA-I) and from two regional WRF simulations at 50km (WRF50) and 10km (WRF10) resolutions. Previously identified wind patterns were found to span a range of possible manifestations with different implications for ocean forcing. WRF50 simulated patterns with strong barrier-parallel flow more frequently than ERA-I and WRF50 also had faster coastal winds than ERA-I. The two WRF simulations had little significant difference in mean wind speed, but larger differences were found for extreme events, though the sign and magnitude of the difference varies spatially and across the different types of wind patterns. The largest differences in mean turbulent fluxes were found over the marginal ice zone between all datasets and are likely related to treatment of sea ice thickness and concentration in WRF.