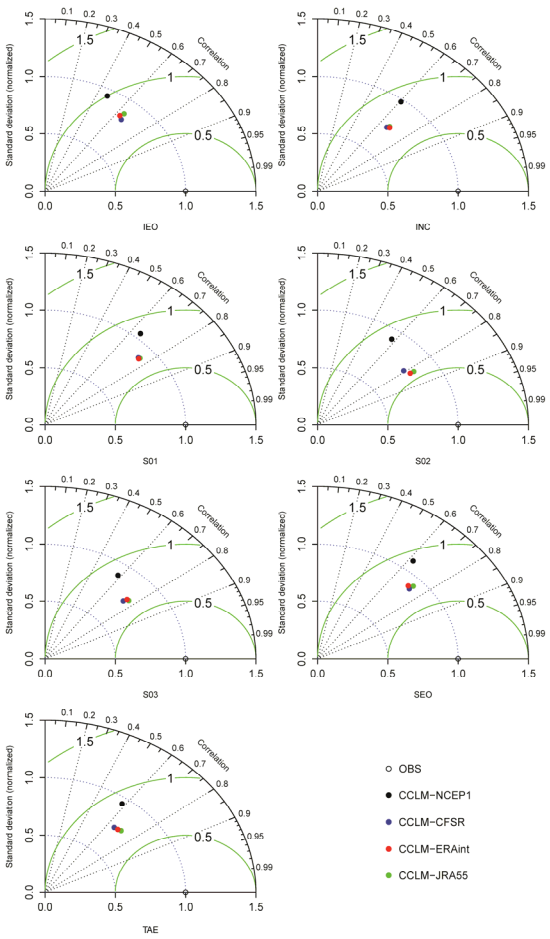
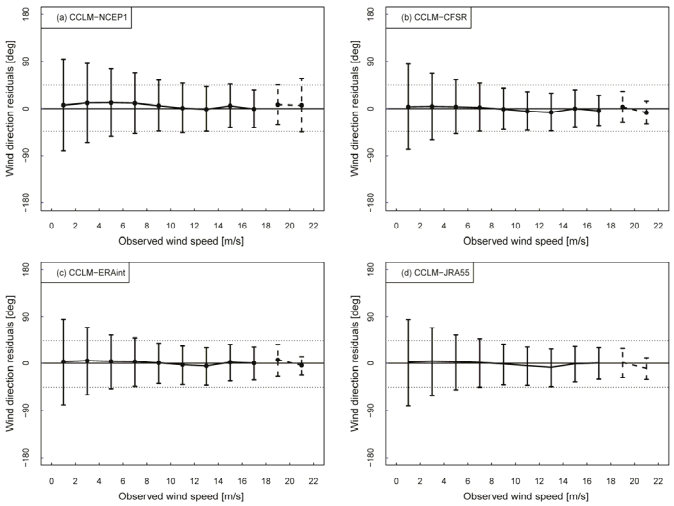
Li, D., H. von Storch, B. Geyer, 2016: Testing reanalyses in constraining dynamical downscaling. *J. Meteor. Soc. Japan,* **94A**, 47-68.
https://doi.org/10.2151/jmsj.2015-044



← Figure 1. Taylor diagrams comparing the observations with the four downscaled wind products for each station.

↓ Figure 2. Dependence of the wind direction residuals on the binned observed wind speeds at all available stations for the four downscaled wind products. Points and bars indicate average residuals and standard deviations, respectively.



- We test the use of four reanalysis data sets (NCEP1, ERAint, CFSR, JRA55) in constraining dynamical downscaling by assessing the skill of the reconstruction of the coastal winds of the Yellow Sea using the COSMO model in CLimate Mode (CCLM) with 7-km resolution.
- The downscaled simulations yield good-quality wind products; the simulations driven by ERAint, JRA55 and CFSR are consistent with each other in the reproduction of local wind speed and direction, and much better than the one downscaling from NCEP1 (Fig. 1).
- The simulated winds tend to overestimate observed low wind speeds and to underestimate observed high wind speeds; they are better at reproducing intermediate winds (4 – 12 m/s).
- The quality of the modeled wind direction is strongly associated with the wind speed intensities, exhibiting less error variability of wind direction at strong wind speeds than at light wind speeds (Fig. 2).