

AI Weather Models cannot simulate the "Butterfly Effect"

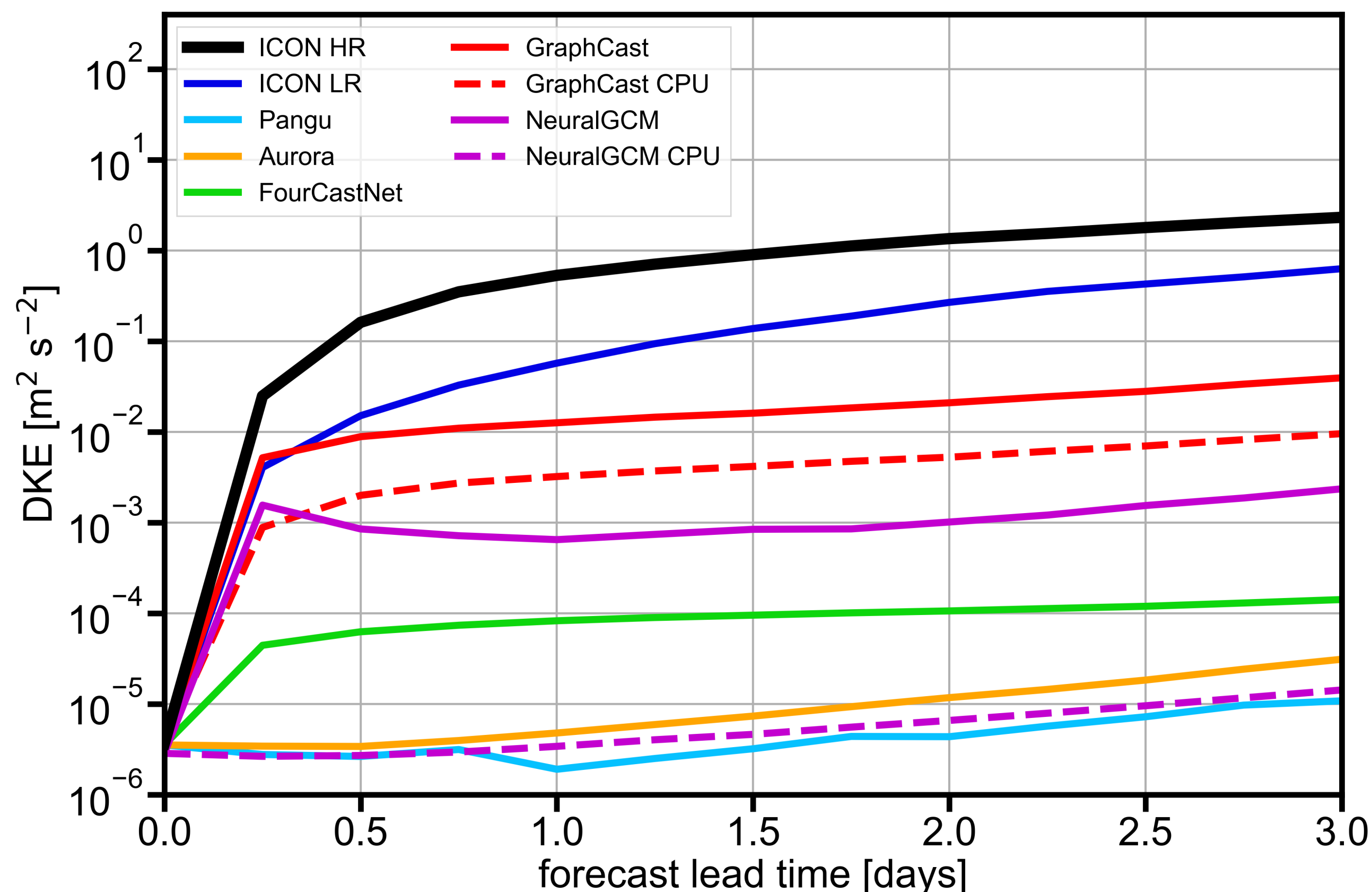
Tobias Selz & George Craig



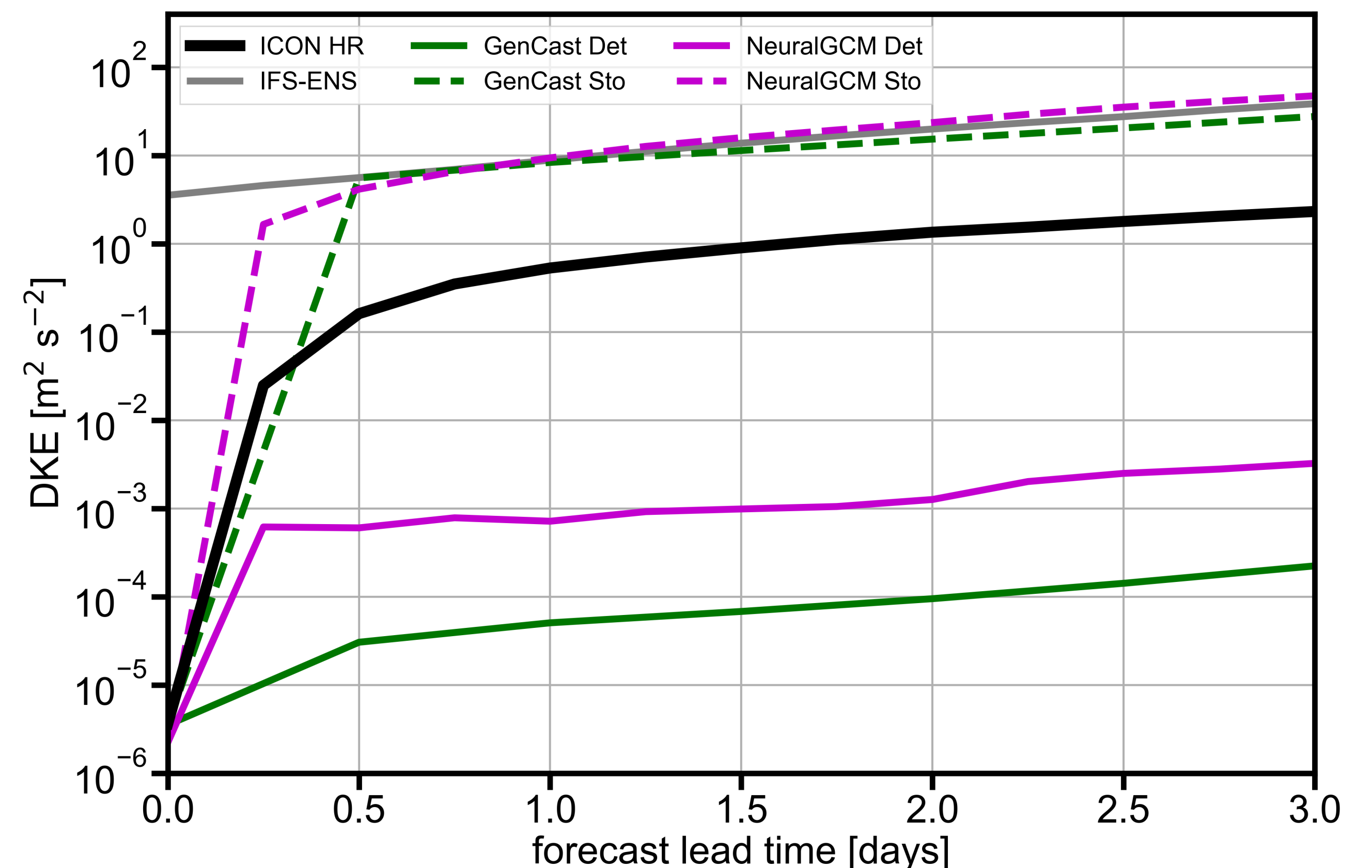
Uncertainty growth time series

Globally averaged Difference Kinetic Energy (DKE) at 300hPa

"Deterministic" models

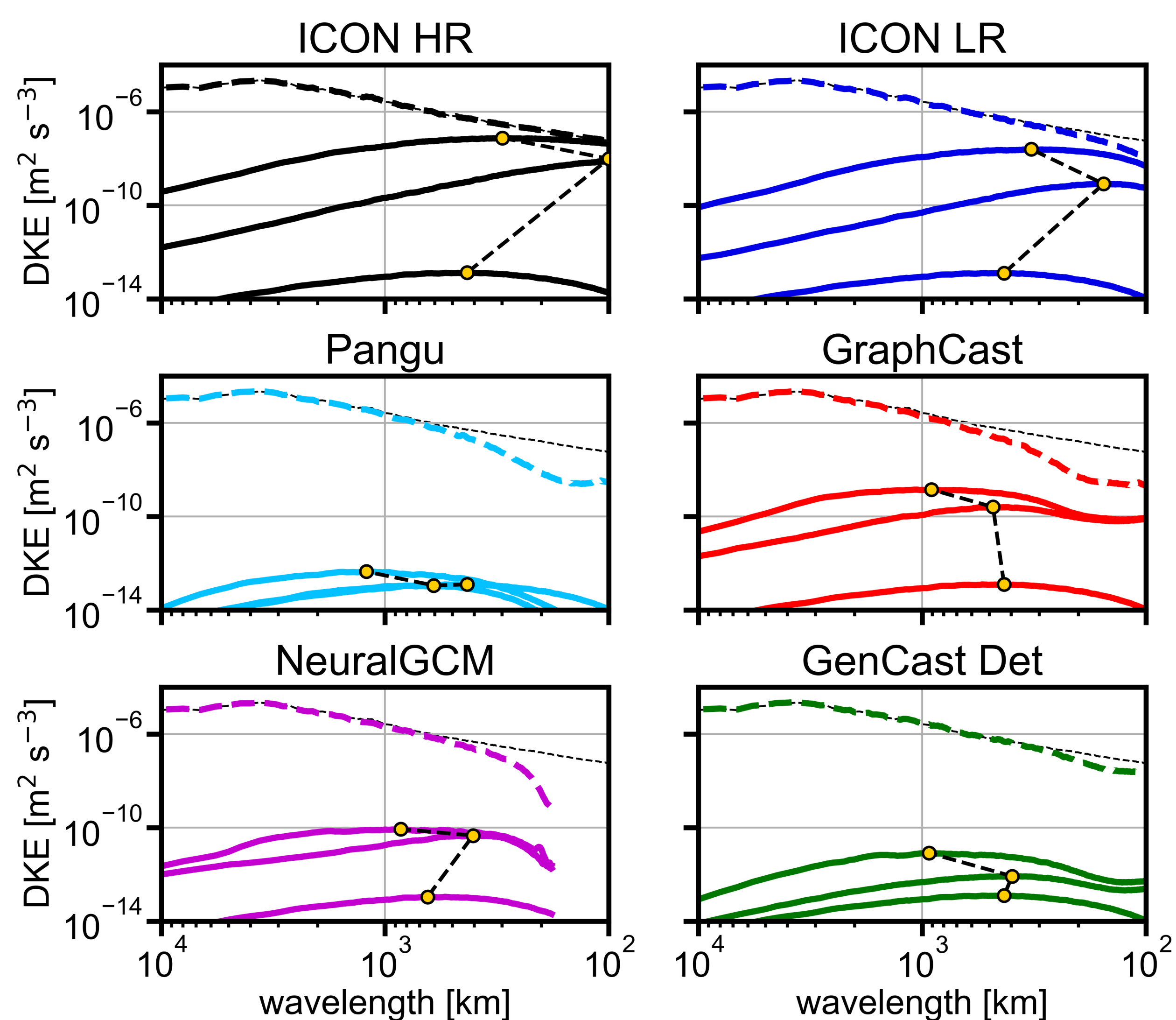


"Stochastic" models



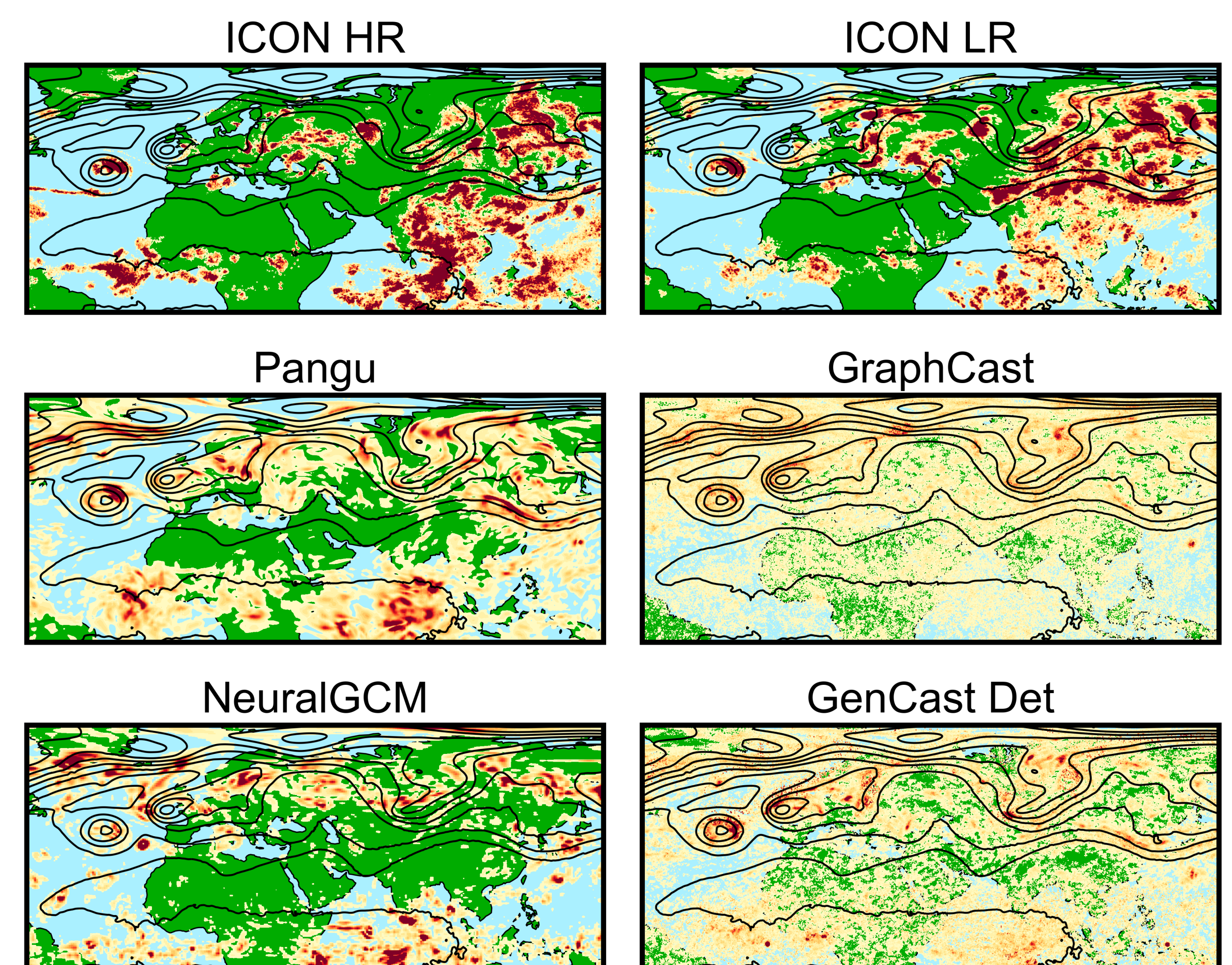
Spectral distribution

DKE spectra at 300hPa after 0h, 12h, 72h



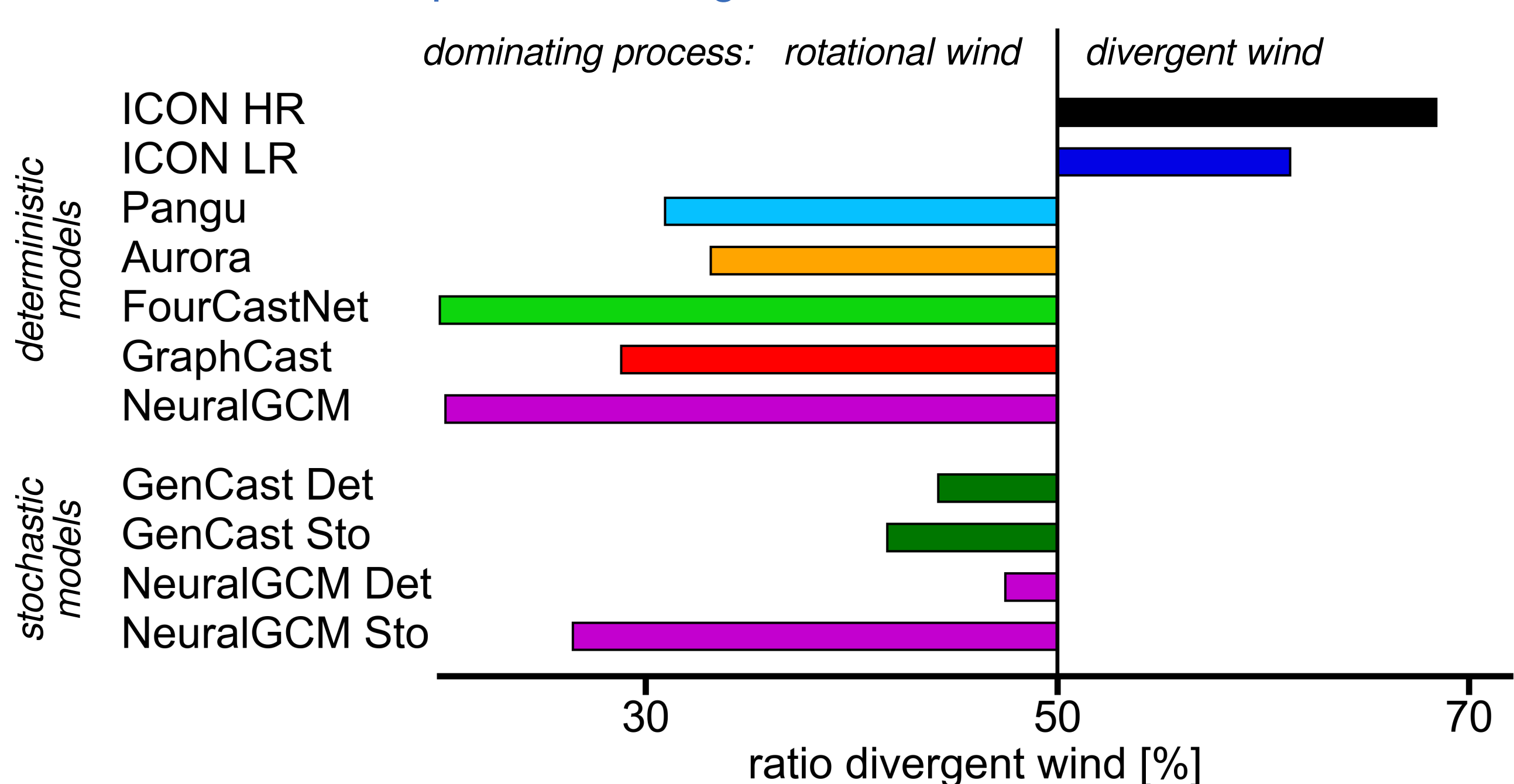
Spatial pattern

Normalized DKE pattern at 300hPa after 12h



Ageostrophic wind contribution

Estimated from simplified PV diagnostics at 300hPa and 24h



Experimental design

