

GraphCast faithfully reproduces ERA5 near-surface wind speed at Antarctic stations — — but ERA5 itself deviates substantially from in-situ observations

A multi-way evaluation,
testing AI weather prediction models against observations, ERA5 and a physics-based prediction model

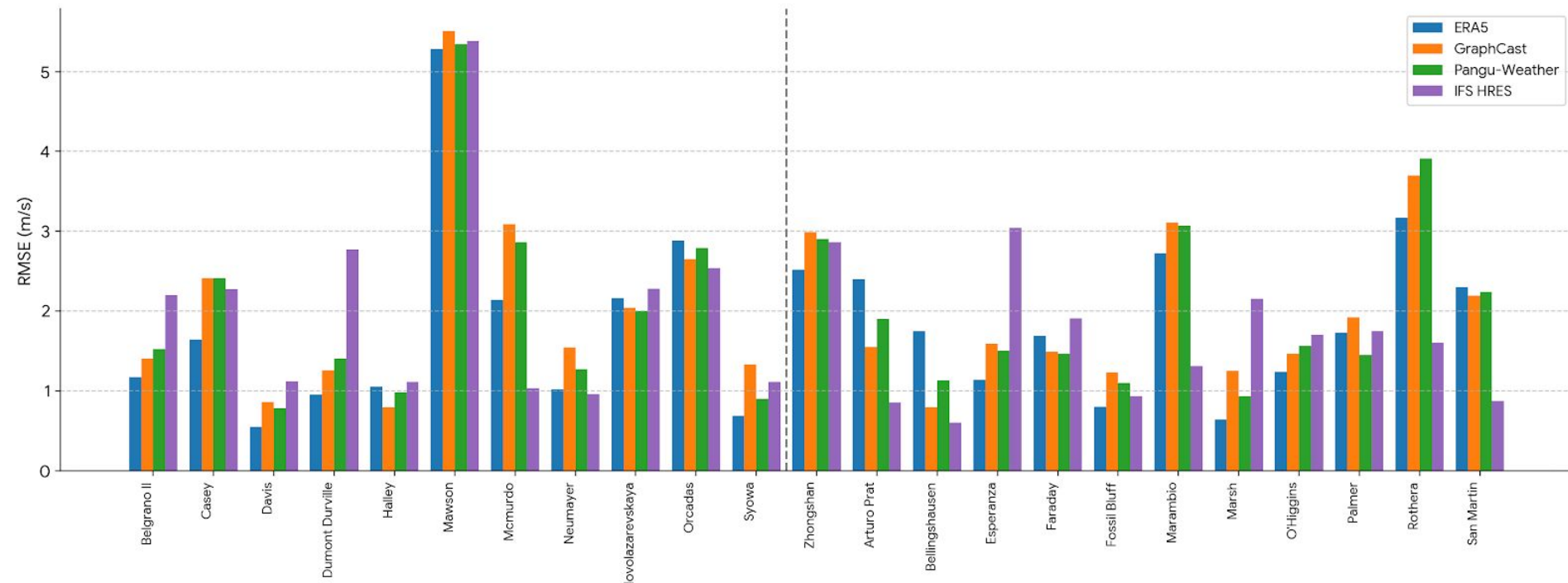
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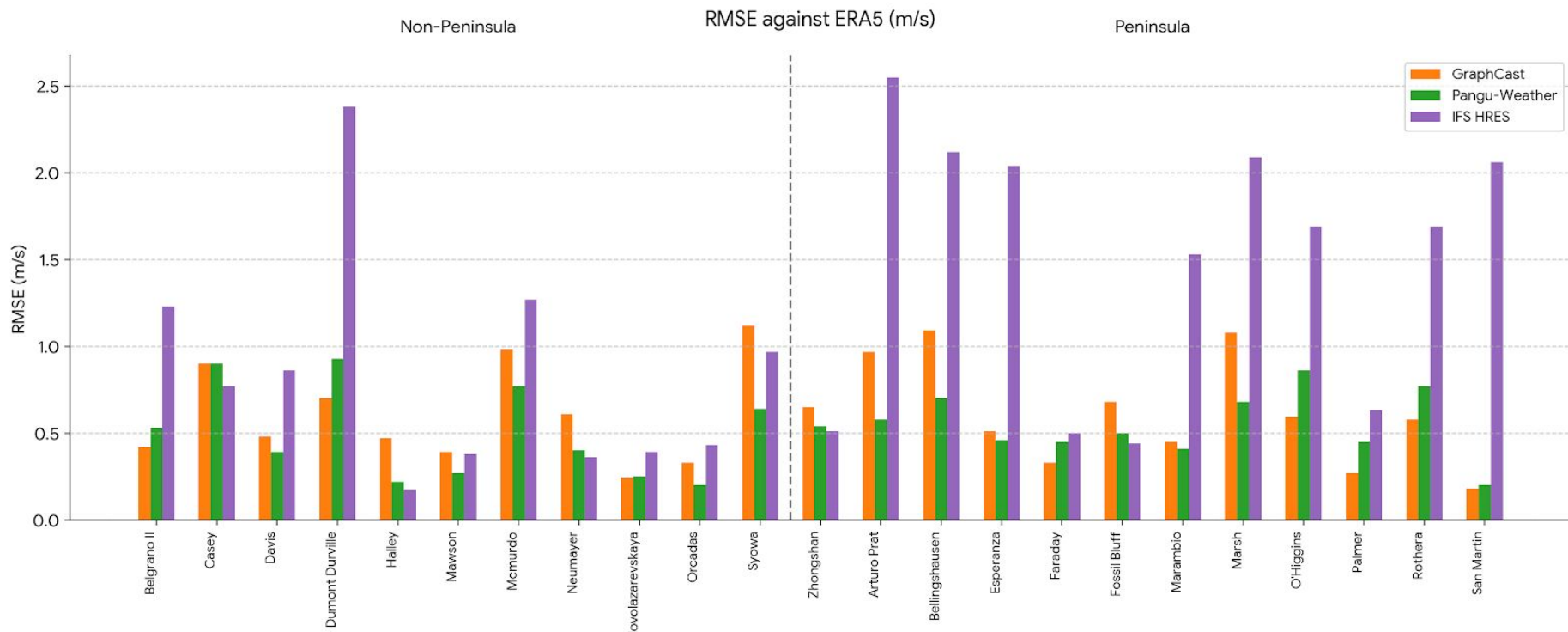
**SUPPORTING MATERIALS:
EXTRA GRAPHS AND MAPS**

RMSE against Observations (m/s)

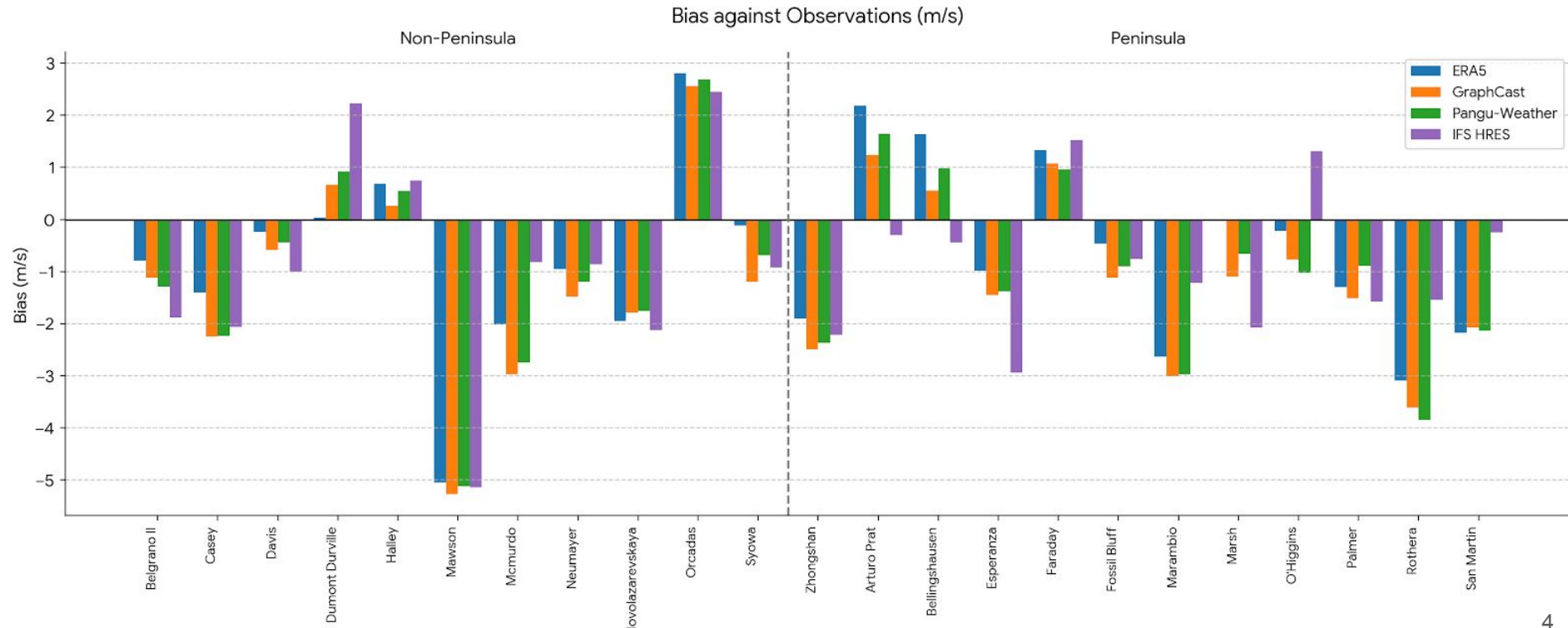
Non-Peninsula

Peninsula



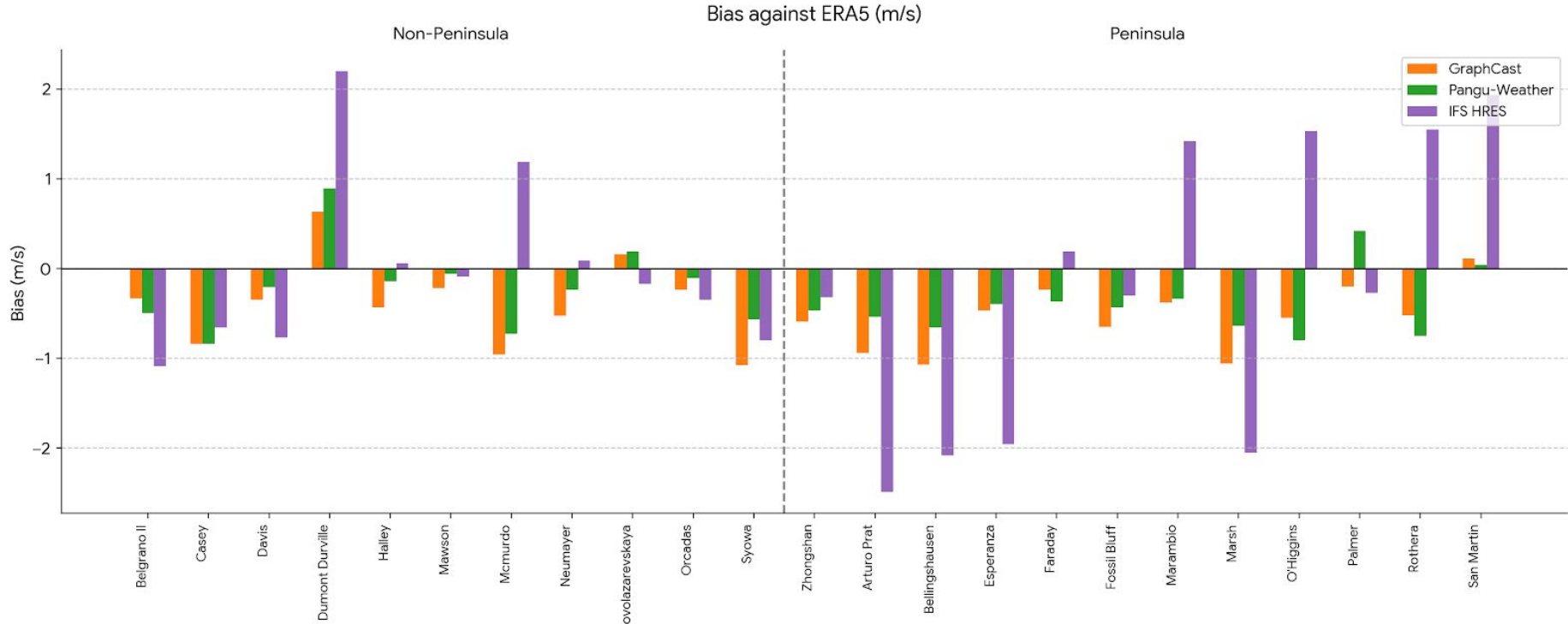


Bias against observations = wind (model) – wind (observations)
If bias is positive, it means that the model overestimates observed wind

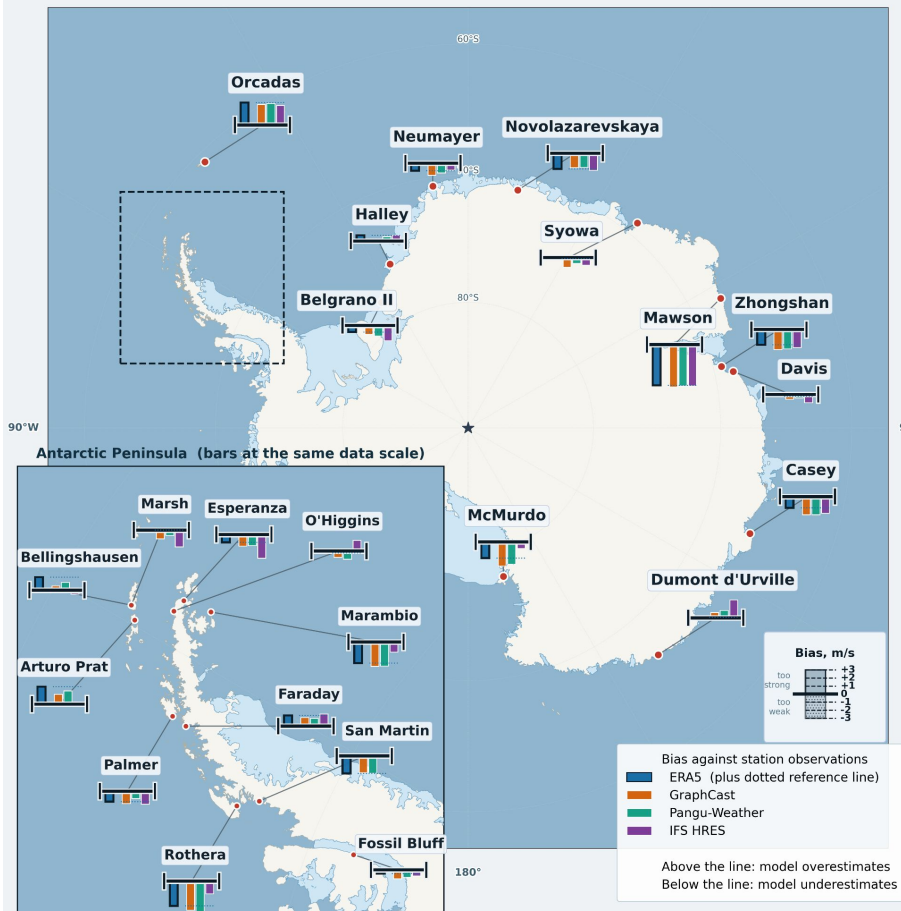


Bias against ERA5 = wind (model) – wind (ERA5)

If bias is positive, it means that the model overestimates ERA5 wind data



Bias against the observations



Bias against the reanalysis

