Supporting Information for "The Signal-to-Noise Paradox applied to Simulations of Interannual Surface Atmospheric Temperature Predictions"

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Introduction

This supporting information provides Figures S1-4 cited in the main article.

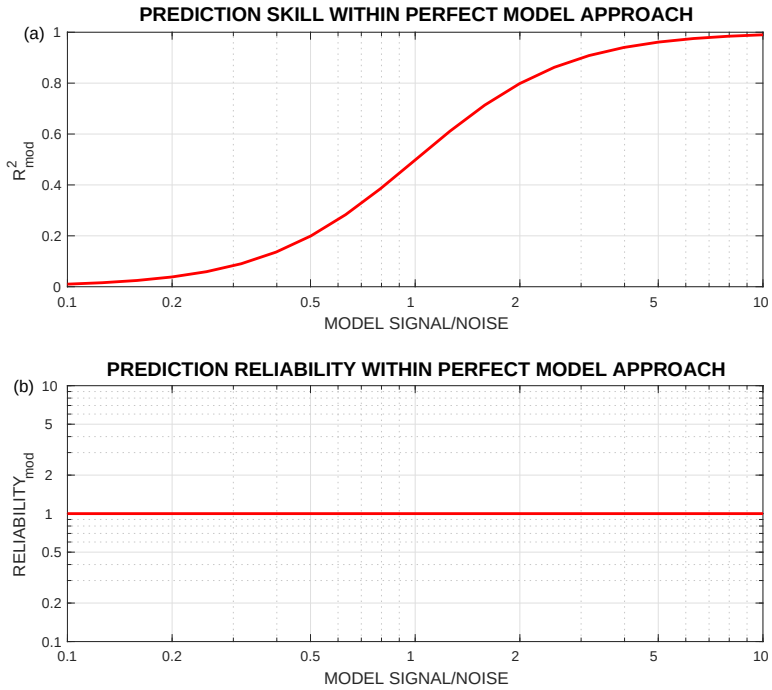

FIGURE S1: **Prediction Skill within a Perfect Model Approach.** (a) Coefficient of Determination (R^2) and (b) Reliability for predictions within a perfect model approach.

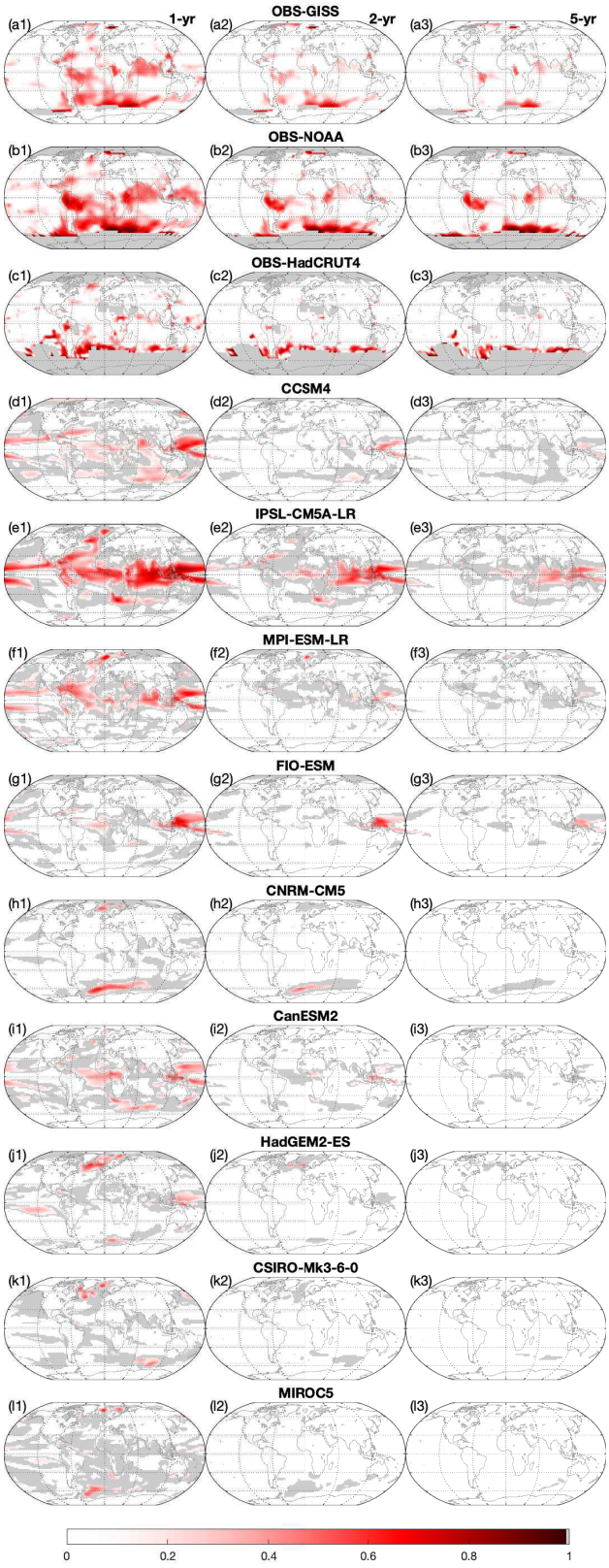

FIGURE S2: **Surface Atmospheric Temperature Persistence Hindcast skills in observations and CMIP5 models.** Hindcasts are annually averages from 1881 to 2004 with delay of 1-yr (a-j1), 2-yr (a-j2), and 5-yr (a-j3). Gray indicates insufficient data for observations and higher ensemble standard deviation than mean for models. Models have been sorted from the closest to observations to further away, over the 5-yr time lags tested for GMT (following Fig. 3).

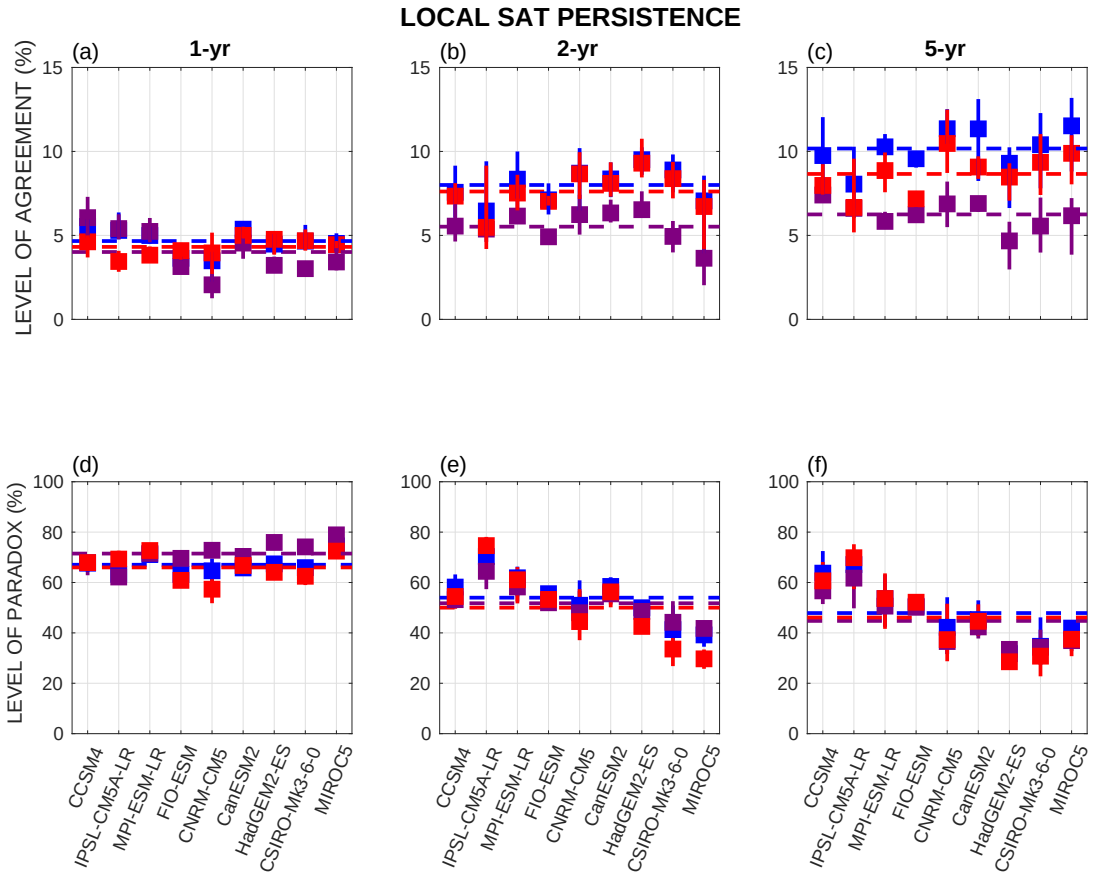

FIGURE S3: **Level of Agreement with observations and Level of Paradox for the Surface Atmospheric Temperature in CMIP5 models.** Hindcasts are annually averages from 1881 to 2004 with lag of 1-yr (a, d), 2-yr (b, e) and 5-yr (c, f). (a-c) Level of Agreement measured the relative area of the globe who reproduced the observation persistence skills within a relative error of ±10%. (d-f) Level of Paradox measured the relative area of the globe where the paradox occurred (i.e., signal in models is lower than in observations or weaker persistence skills in models than observations). Red, purple, and blue indicate models comparison with GISS, NOAA, and HadCRUT4 observation datasets, respectively. Models have been sorted from the closest to observations to further away, over the 5-yr time lags tested for GMT (following Fig. 3).

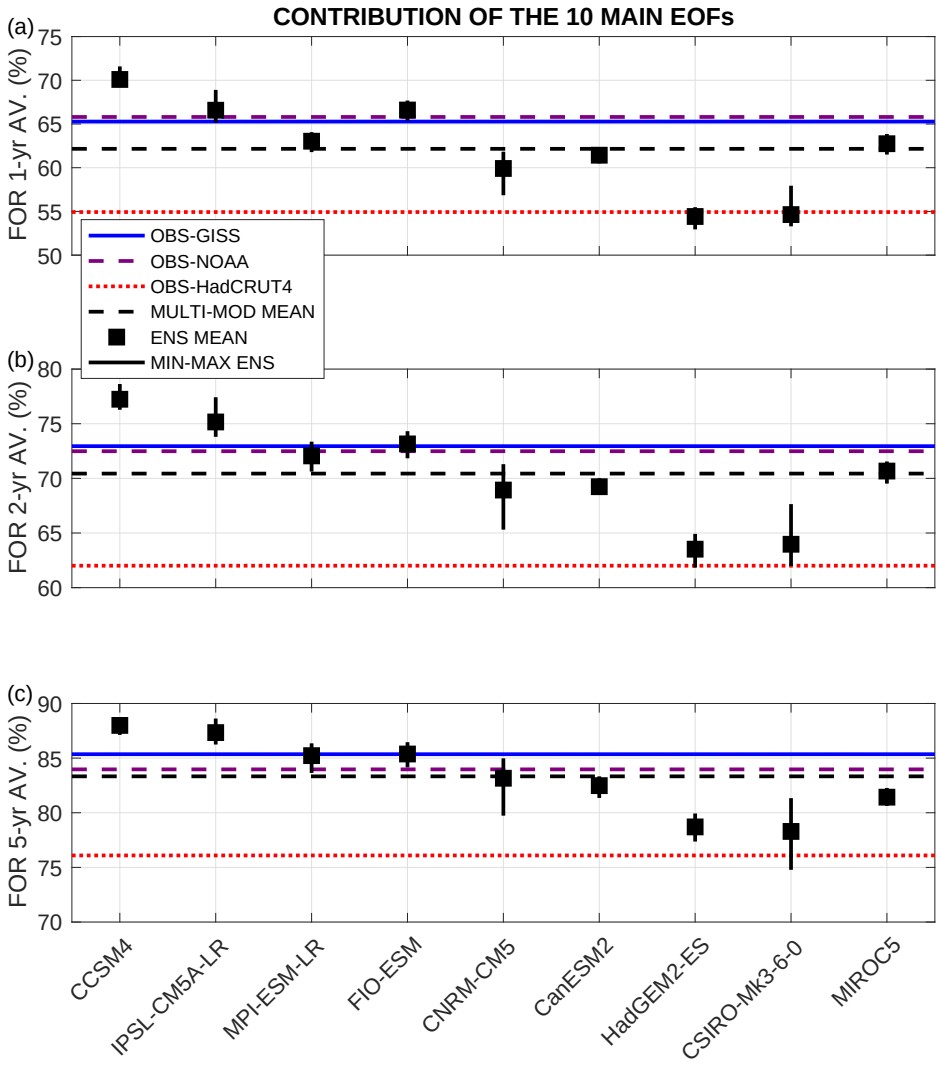

FIGURE S4: **Variance Contribution of the 10 main Empirical Orthogonal Functions of Surface Atmospheric Temperature for observations and CMIP5 models.** Empirical Orthogonal Functions have been computed for (a) annual, (b) 2-yr, and (c) 5-yr time averages from 1881 to 2004. Models have been sorted from the closest to observations to further away, over the 5-yr time lags tested for GMT (following Fig. 3).