Prediction metrics, d=20 Pacific Daily-Averaged SSH MSE Pacific Daily-Averaged SSH Correlation (a) (b) 1.0 ····· climatology 8.0 8.0 SSH Correlation 70 9 0.7 0.6 O.5 0.4 0.2 0.3 0.2 0.0 60 20 40 80 100 20 120 100 120 Forecast lead [days] Forecast lead [days] Atlantic Daily-Averaged SSH MSE Atlantic Daily-Averaged SSH Correlation (C) (d) 0.8 1.0 0.7 8.0 0.6 SSH Correlation 70 9 0.5 0.4 0.3 0.2 0.2 0.1 0.0 0.0 20 60 80 100 120 20 60 120 Forecast lead [days] Forecast lead [days] Pacific Monthly-Averaged SSH Correlation (e) Pacific Monthly-Averaged SSH MSE 1.0 1.0 8.0 SSH Correlation 70 9 0.8 SSH MSE 0.4 0.2 0.2 0.0 20 10 15 25 20 30 35 10 15 25 35 Forecast lead [months] Forecast lead [months] (h) Atlantic Monthly-Averaged SSH Correlation (g) Atlantic Monthly-Averaged SSH MSE 8.0 0.6 SSH Correlation 7.0 9.0 0.5 0.4 0.3 0.2 0.2 0.1 0.0 10 15 20 25 35 5 15 20 25 5 30 10

Forecast lead [months]

Forecast lead [months]

PCA + LIM

CAE + LIM

PCA + DP

- CAE + DP

KAE