

Supplementary material

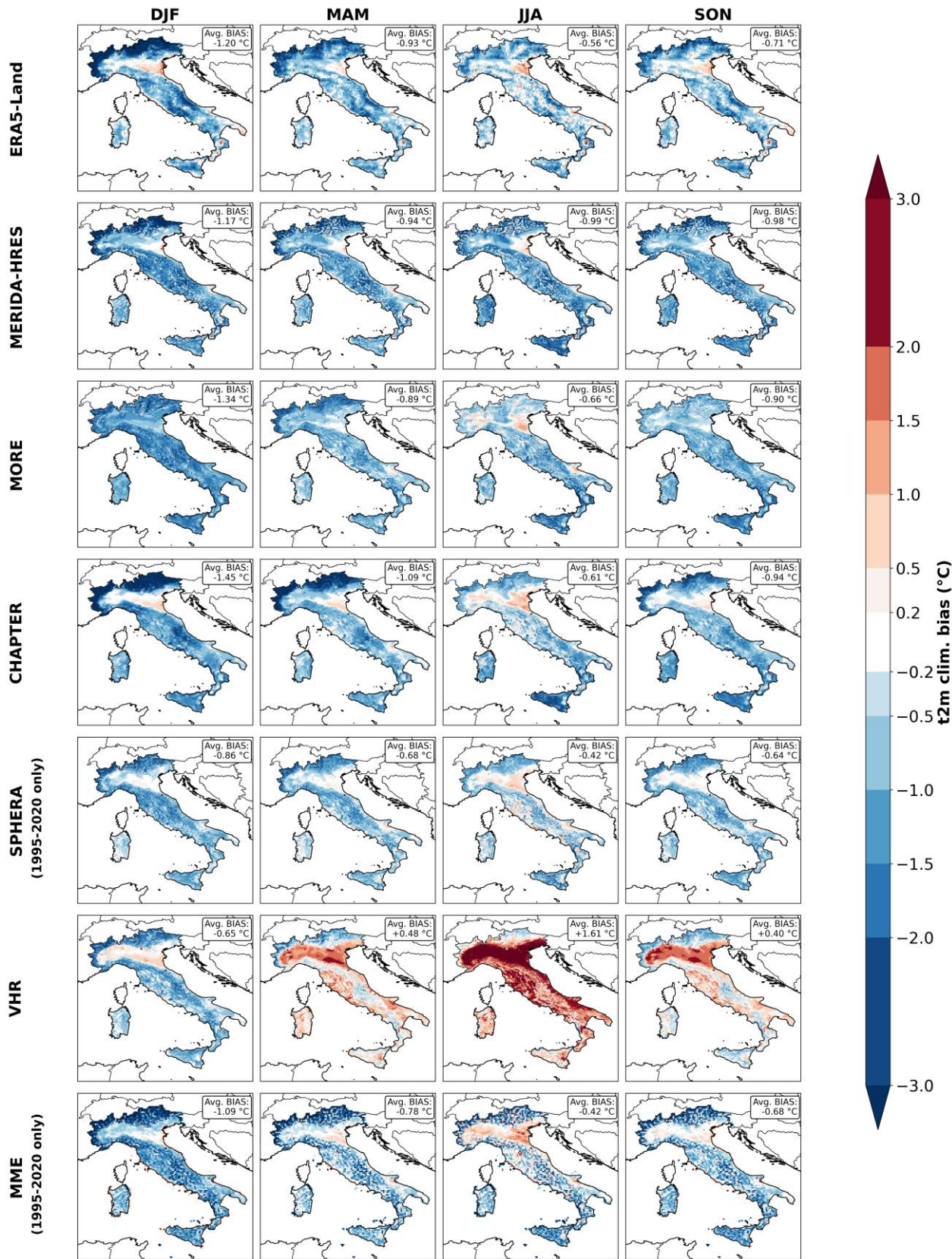


Figure S1: Maps of seasonal climatological t2m biases for the period 1991-2020. It should be noted that in the MME there is no correspondence between elevations, therefore the bias signal is more scattered than for individual products, where observations are obtained at the same elevation as the model field.

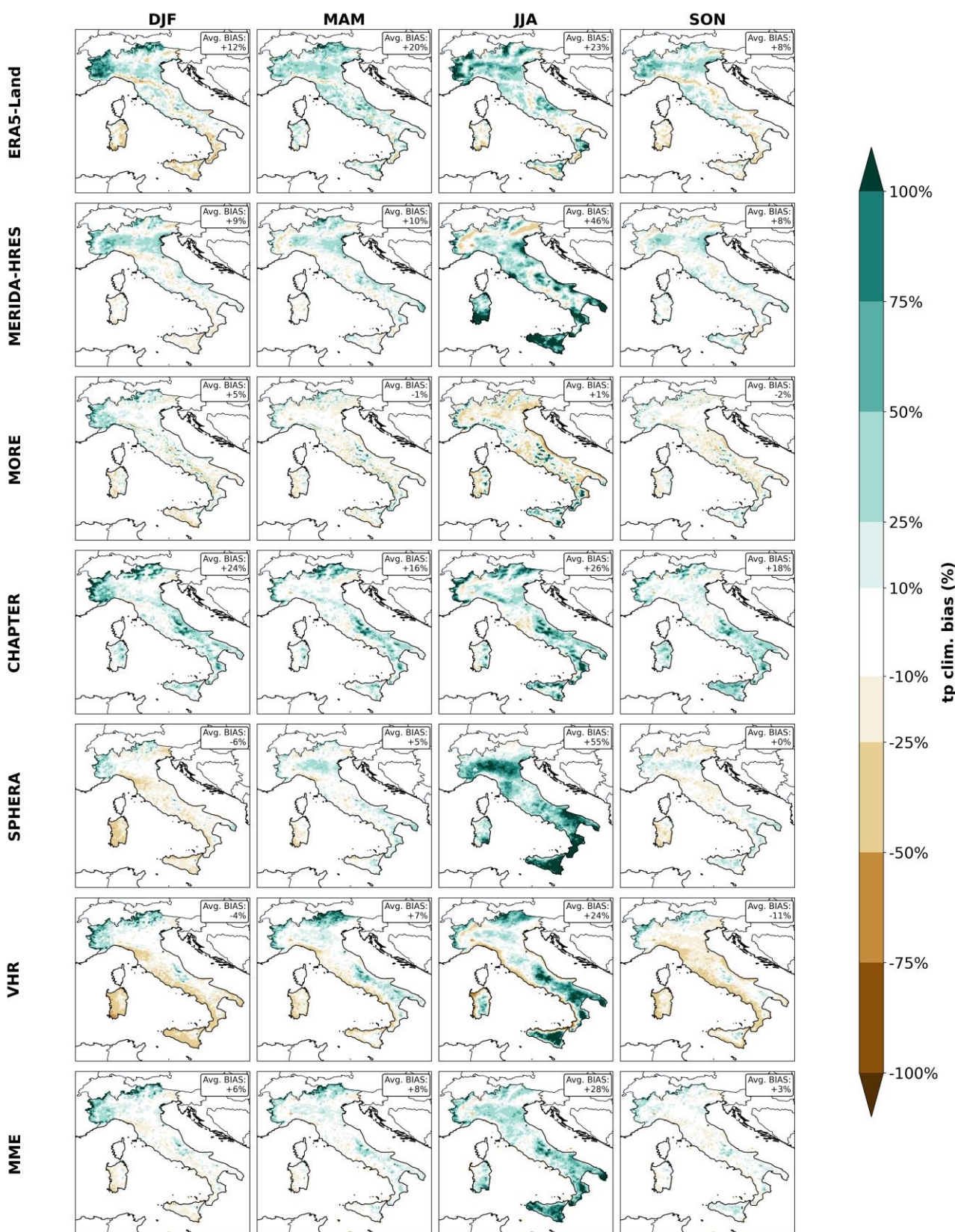


Figure S2: Maps of seasonal climatological tp relative biases for the period 1995-2020.

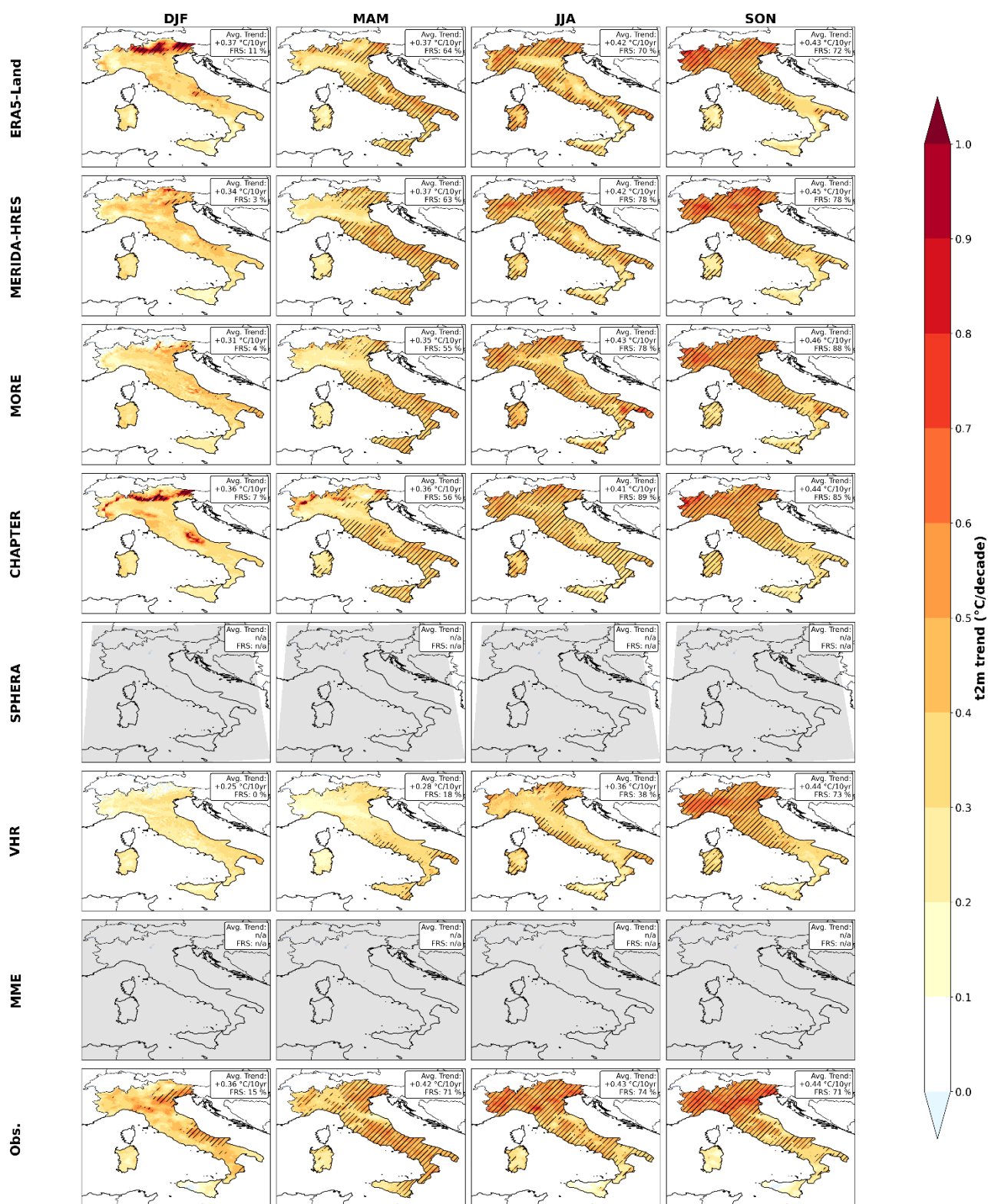


Figure S3: Maps of the t2m trend for the period 1991-2020. Each column represents a season. Each row represents a different product (where available). The diagonal hatching highlights area with significant trends. Average trends and FRS are reported in the top-right boxes.

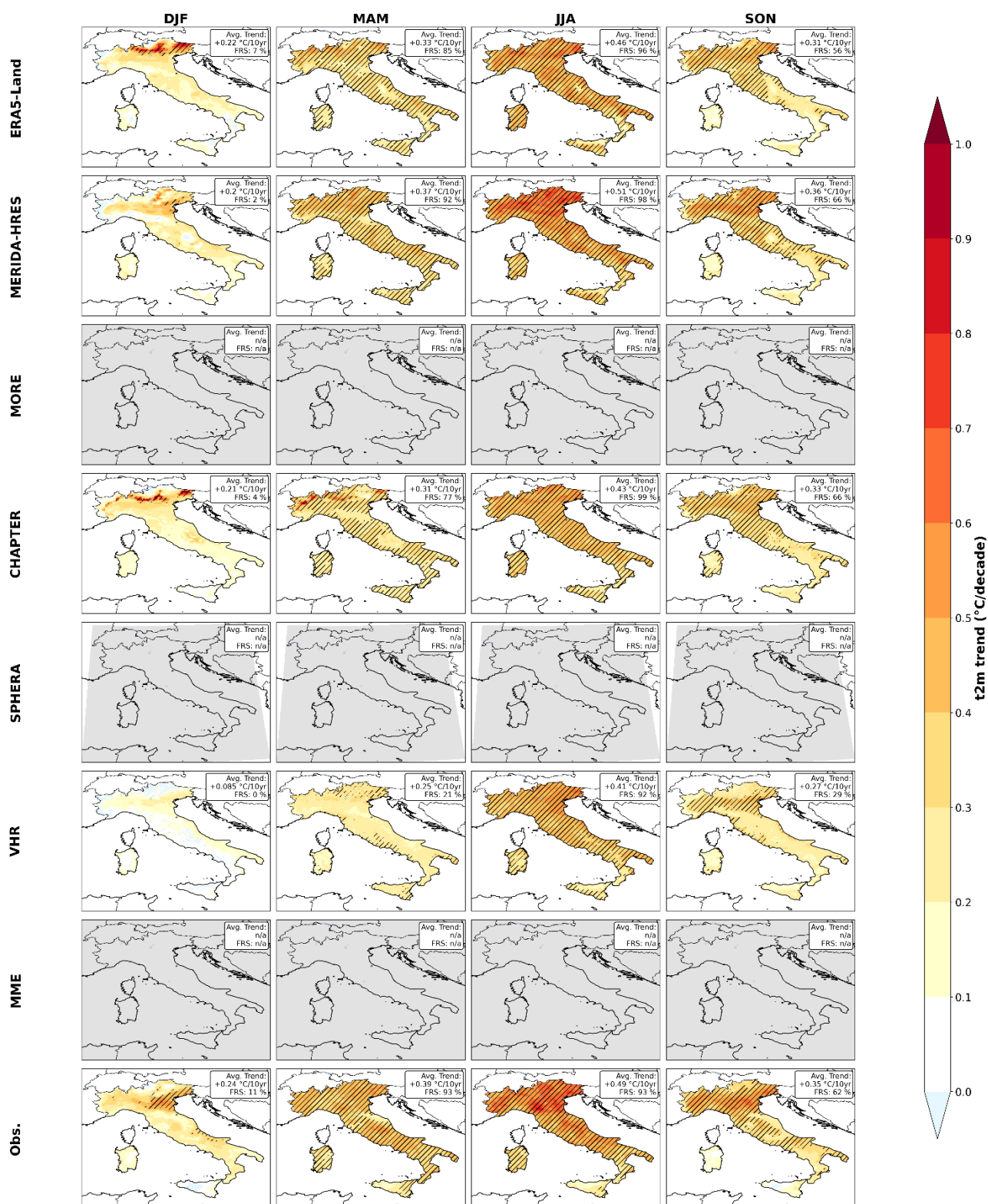


Figure S4: Maps of the t2m trend for the period 1986-2020. Each column represents a season. Each row represents a different product (where available). The diagonal hatching highlights area with significant trends. Average trends and FRS are reported in the top-right boxes.

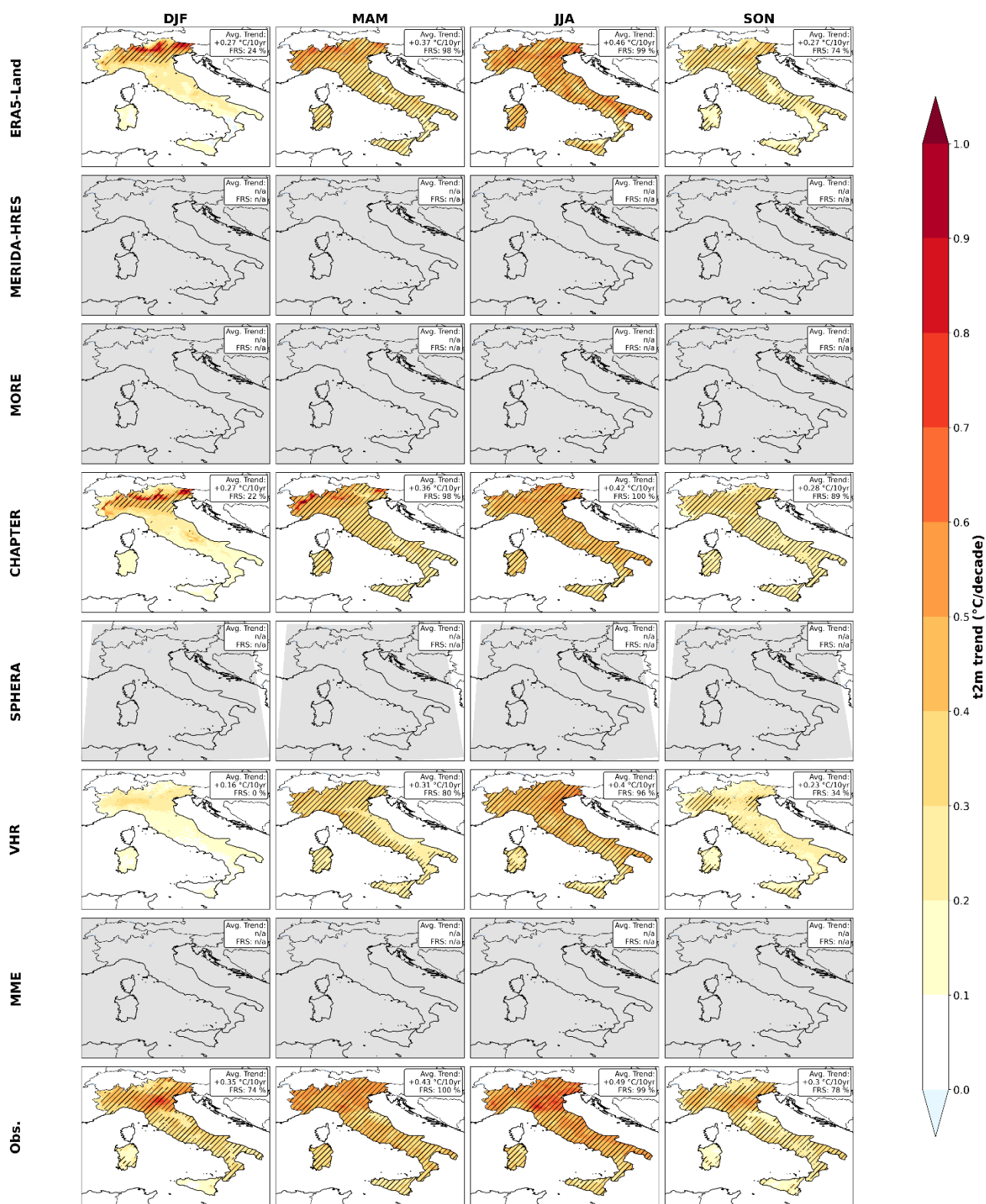


Figure S5: Maps of the t2m trend for the period 1981-2020. Each column represents a season. Each row represents a different product (where available). The diagonal hatching highlights area with significant trends. Average trends and FRS are reported in the top-right boxes.

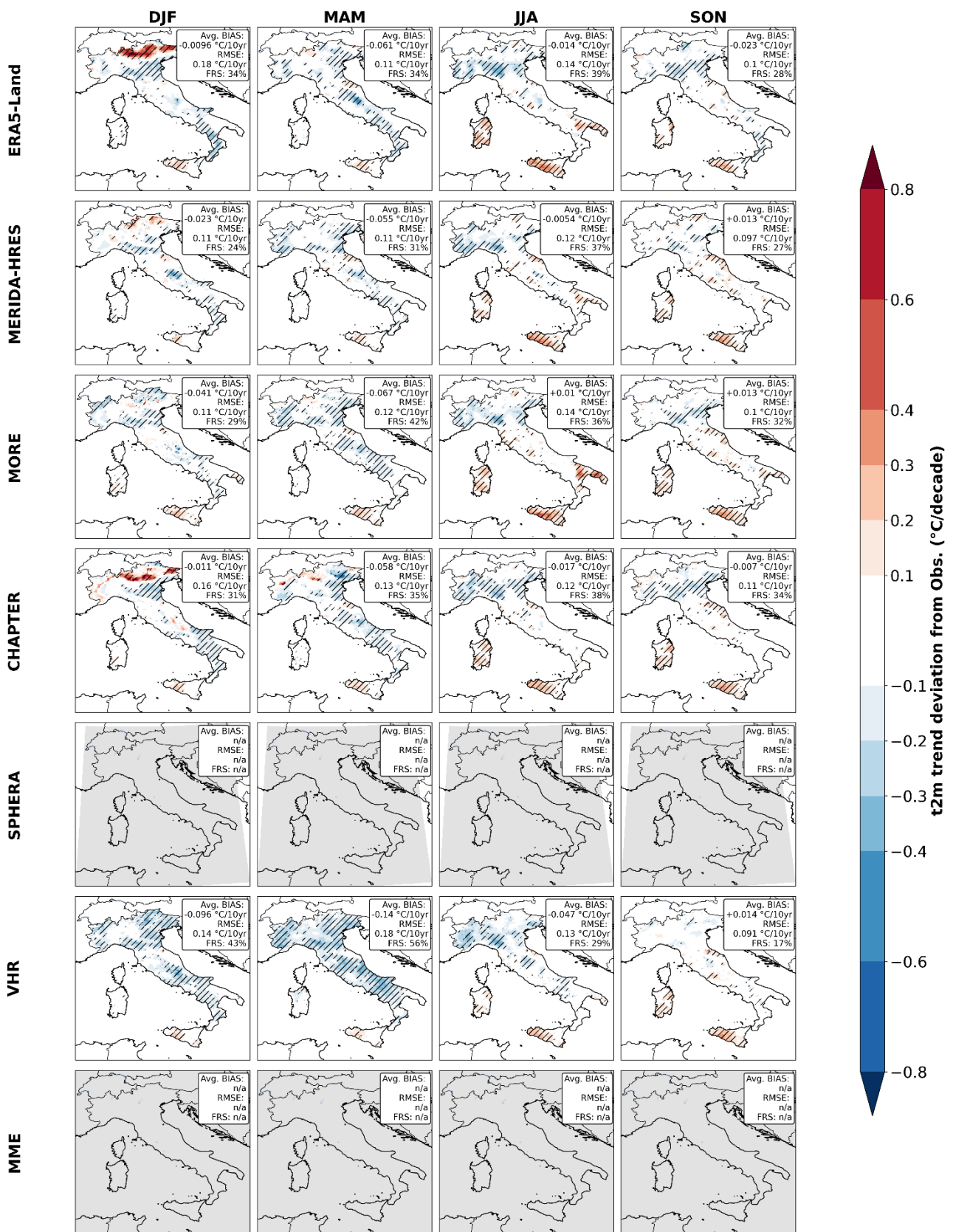


Figure S6: Maps of the trend of t2m deviations for the period 1991-2020. Each column represents a season. Each row represents a different product (where available). The diagonal hatching highlights area with significant trends. Scores are reported in the top-right boxes.

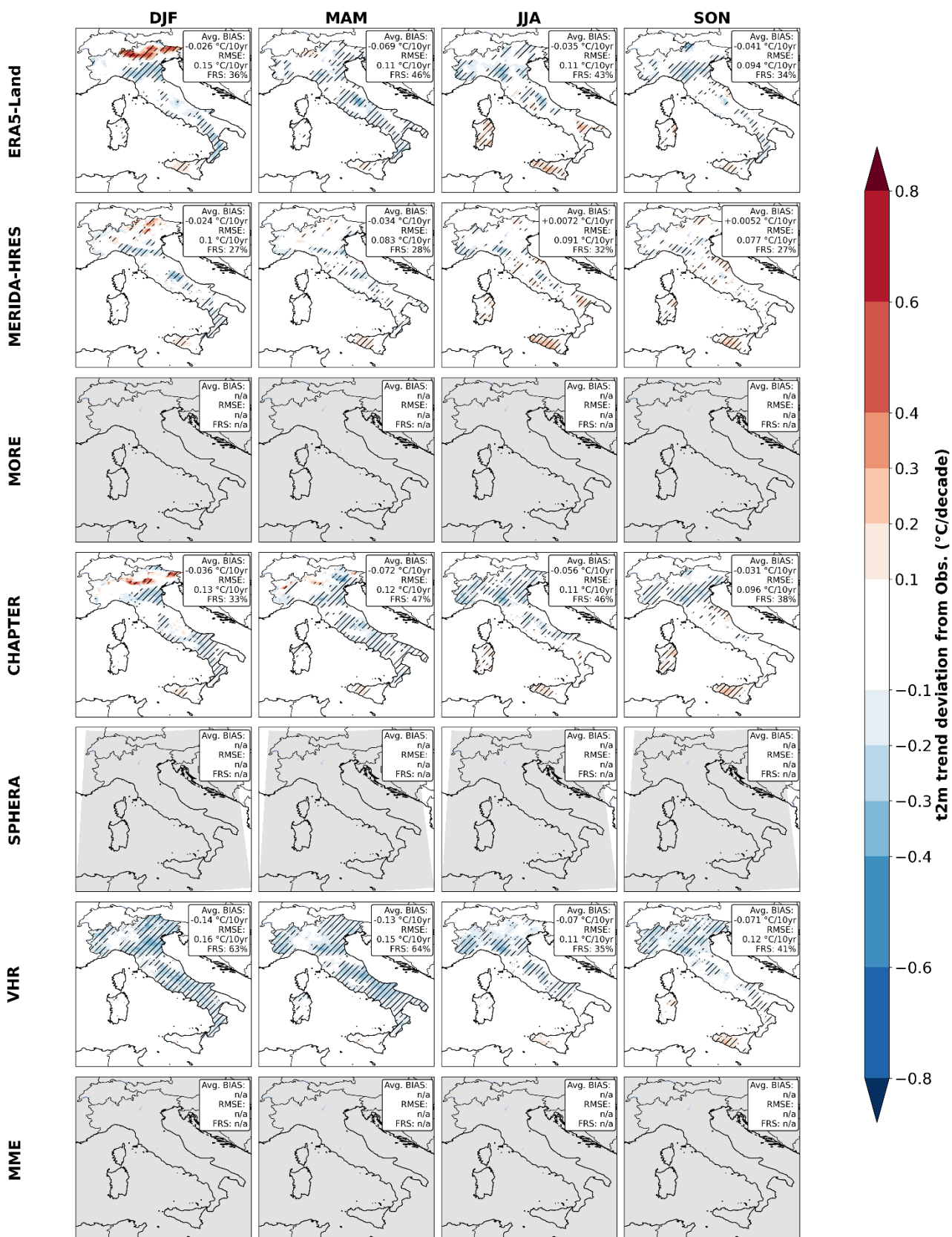


Figure S7: Maps of the trend of t2m deviations for the period 1986-2020. Each column represents a season. Each row represents a different product (where available). The diagonal hatching highlights area with significant trends. Scores are reported in the top-right boxes.

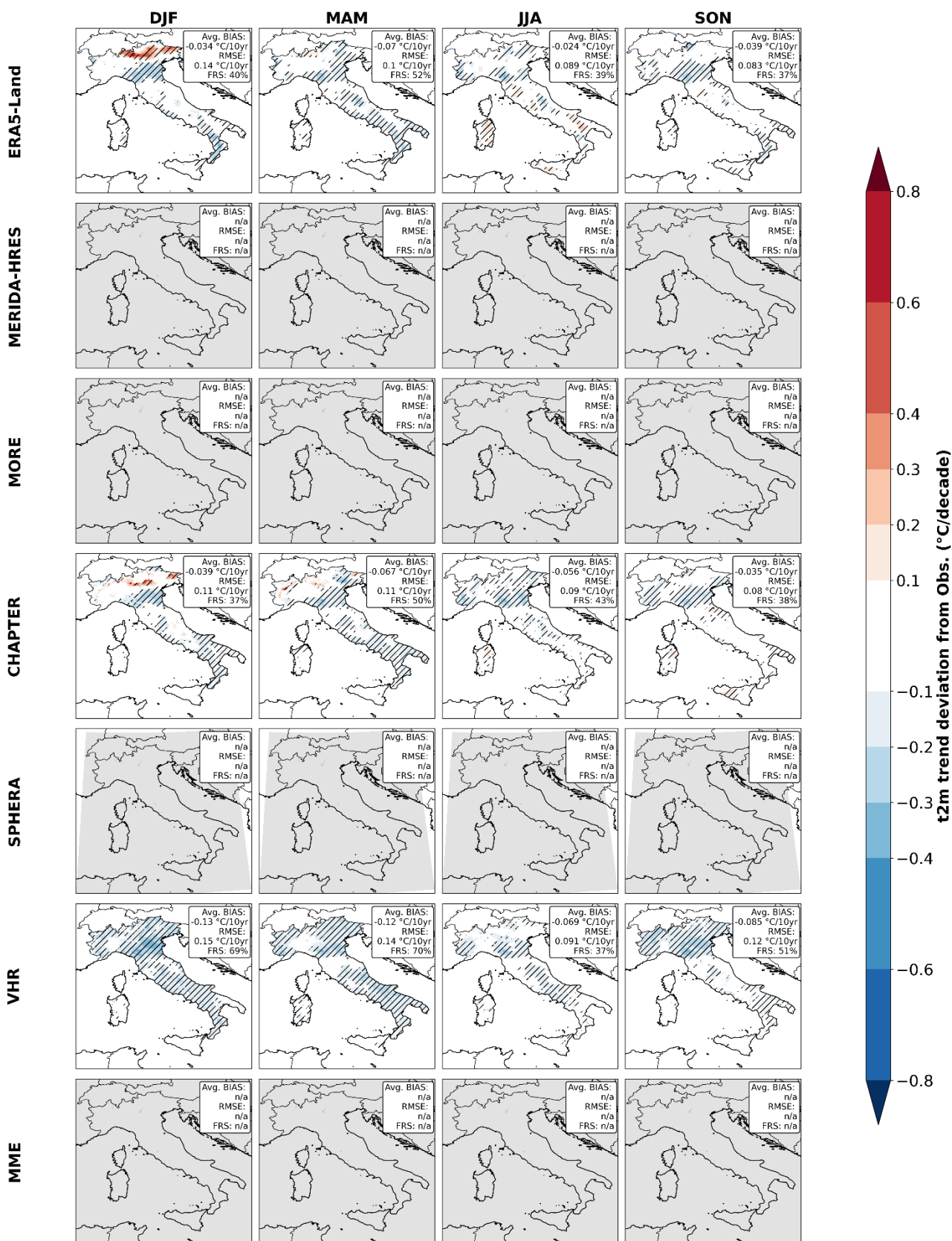


Figure S8: Maps of the trend of t2m deviations for the period 1981-2020. Each column represents a season. Each row represents a different product (where available). The diagonal hatching highlights area with significant trends. Scores are reported in the top-right boxes.

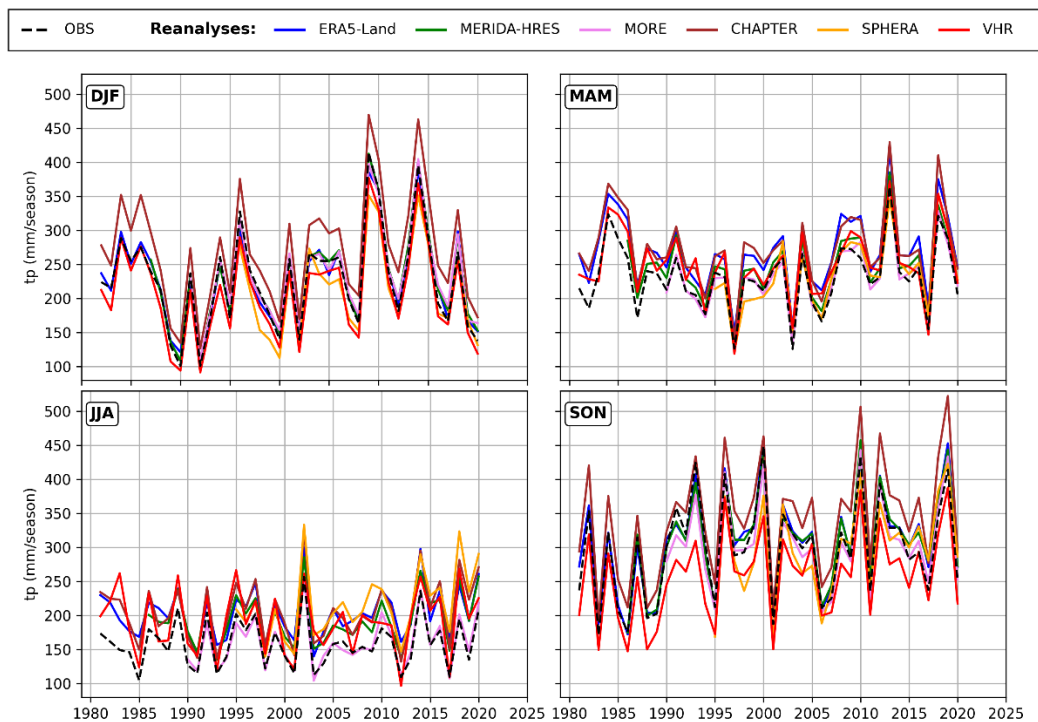


Figure S9: Time series of seasonal cumulated tp from observations and downscalings, spatially averaged over the Italian domain. Each colour represents a different downscaling (legend above).

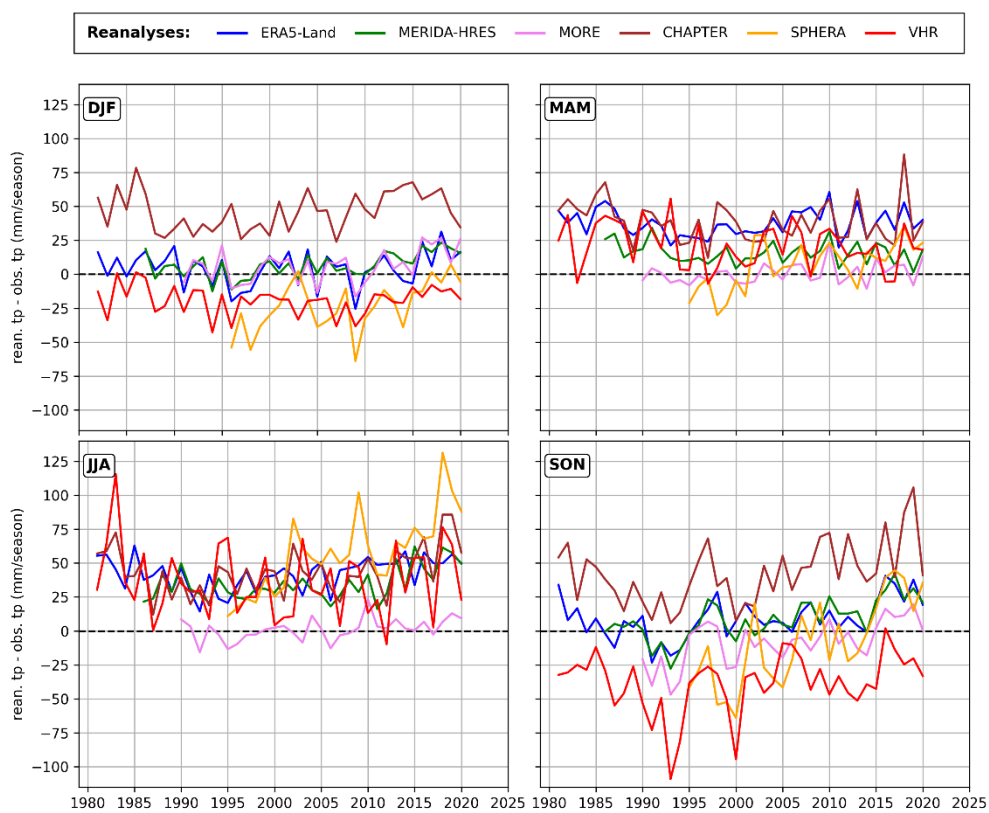


Figure S10: Time series of the differences between seasonal tp from downscalings and from observations, spatially averaged over the Italian domain. Each color represents a different downscaling (legend above).

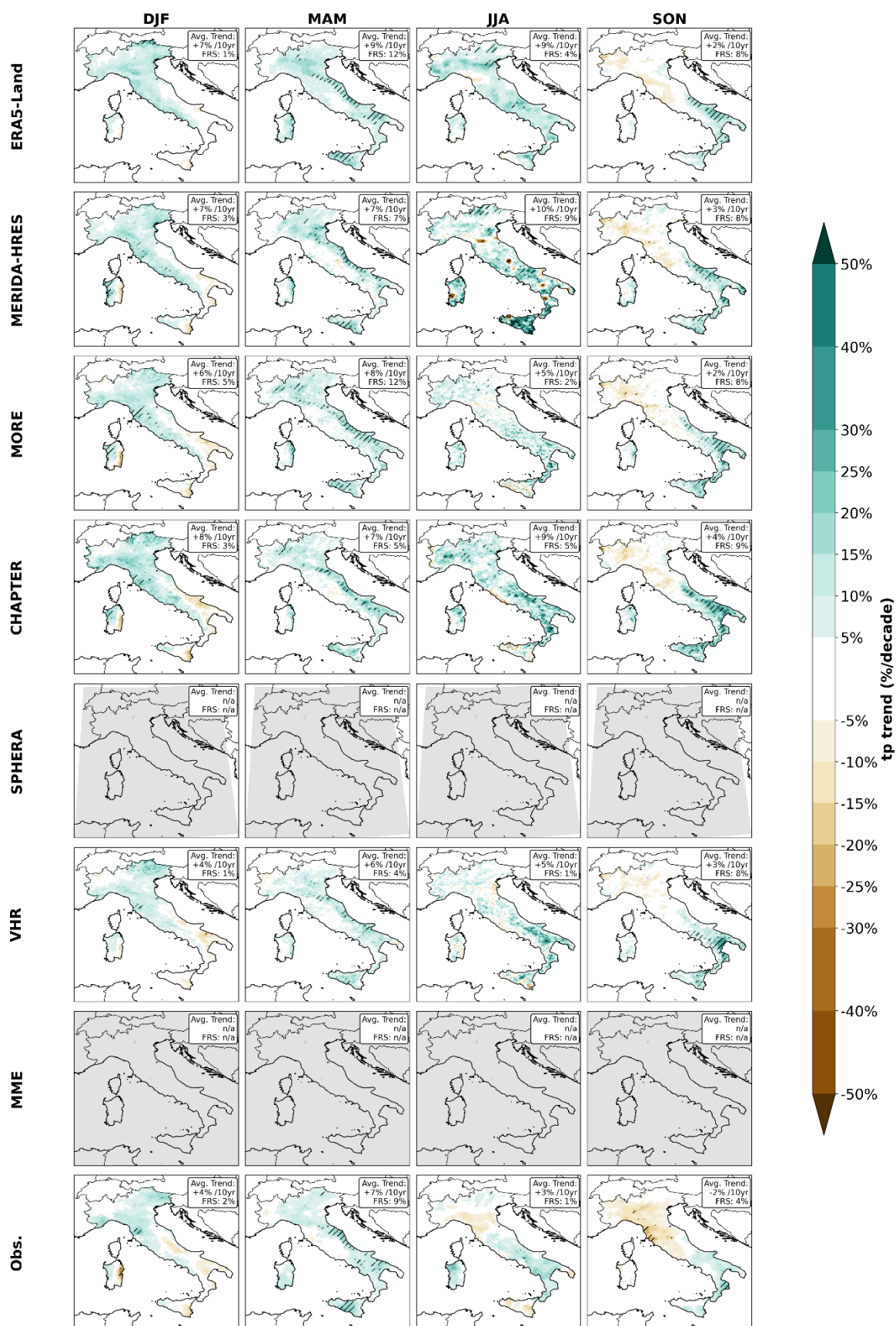


Figure S11: Maps of the tp relative trend for the period 1991-2020. Each column represents a season. Each row represents a different product (where available). The diagonal hatching highlights area with significant trends. Average trends and FRS are reported in the top-right boxes.

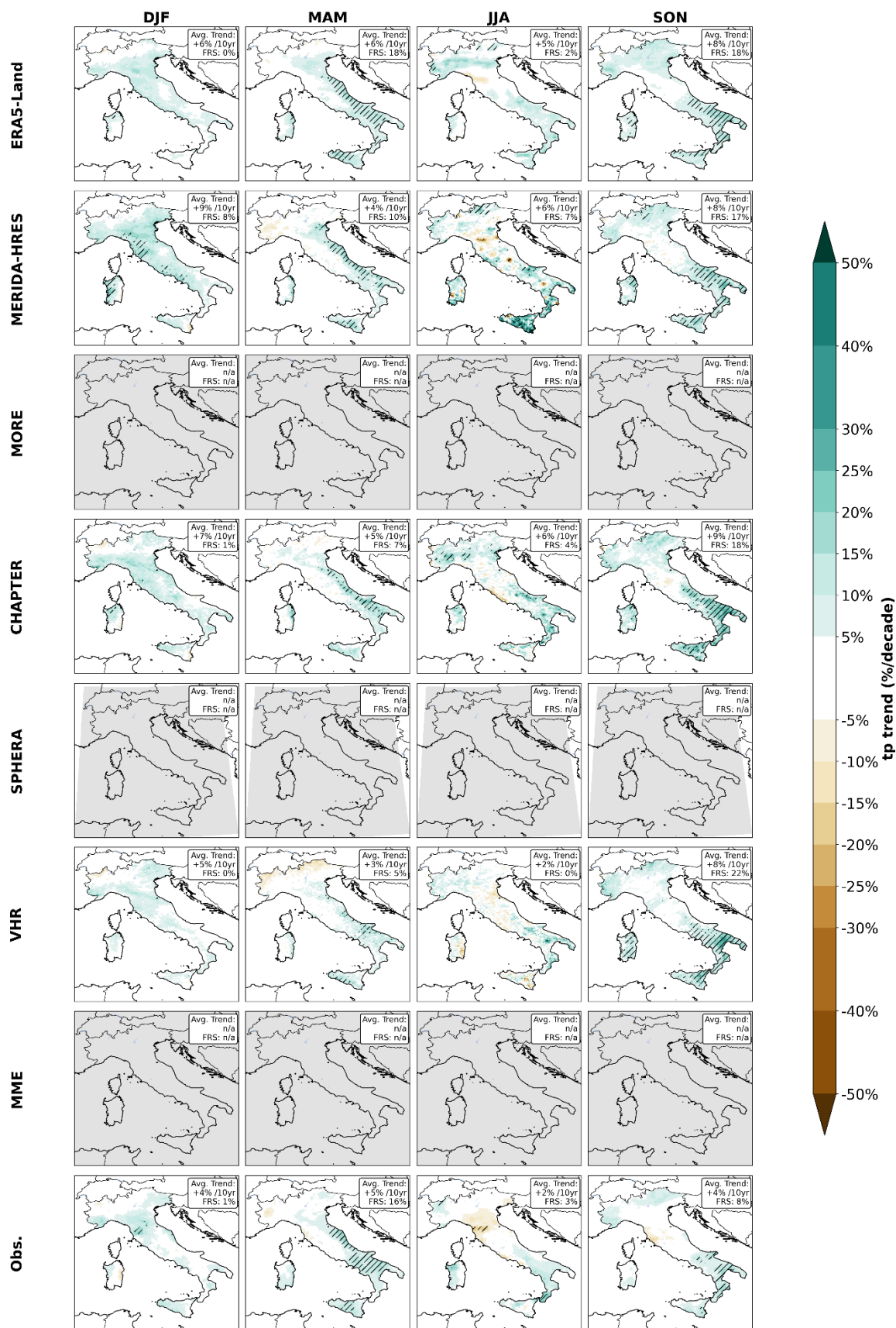


Figure S12: Maps of the tp relative trend for the period 1986-2020. Each column represents a season. Each row represents a different product (where available). The diagonal hatching highlights area with significant trends. Average trends and FRS are reported in the top-right boxes.

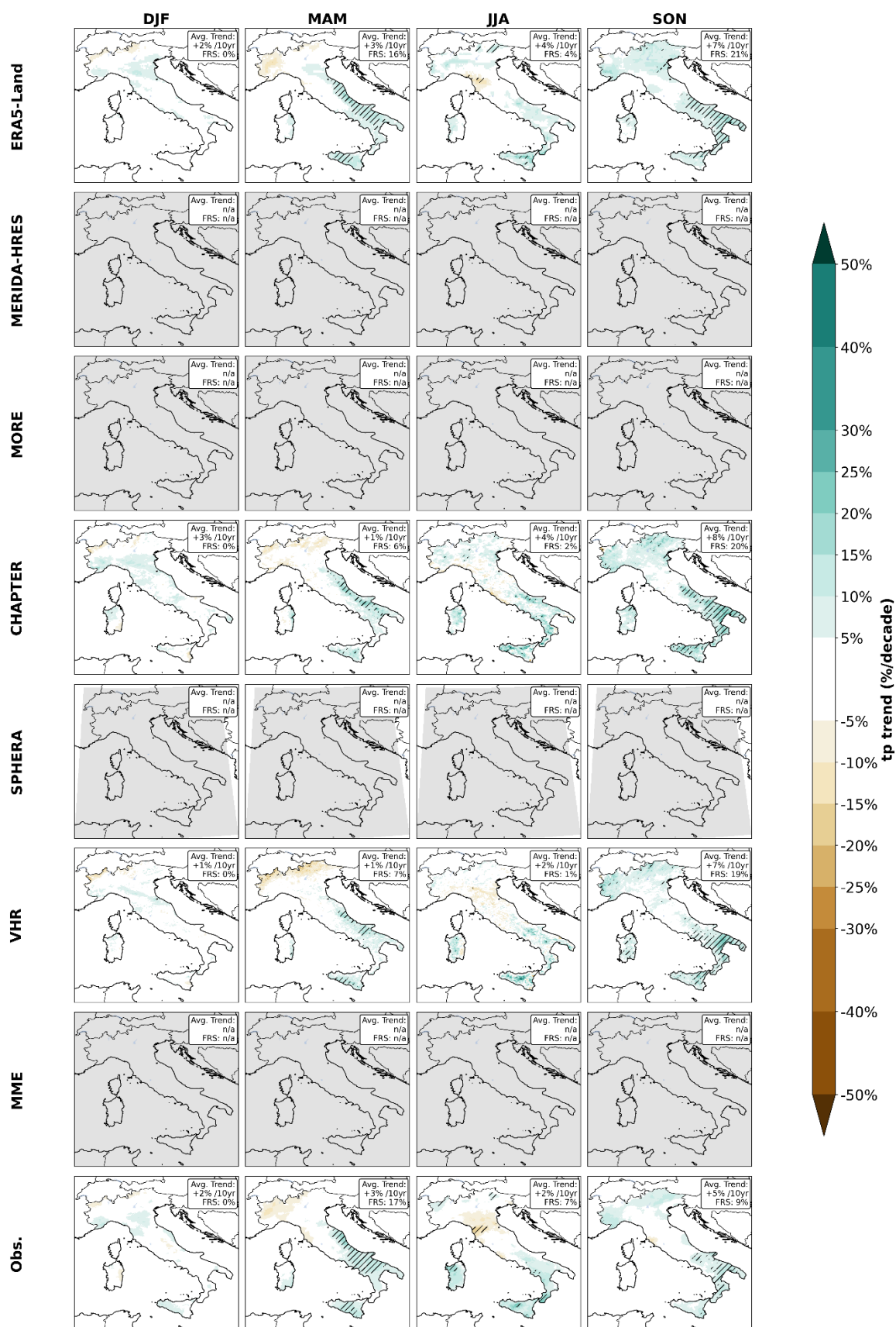


Figure S13: Maps of the tp relative trend for the period 1981-2020. Each column represents a season. Each row represents a different product (where available). The diagonal hatching highlights area with significant trends. Average trends and FRS are reported in the top-right boxes.

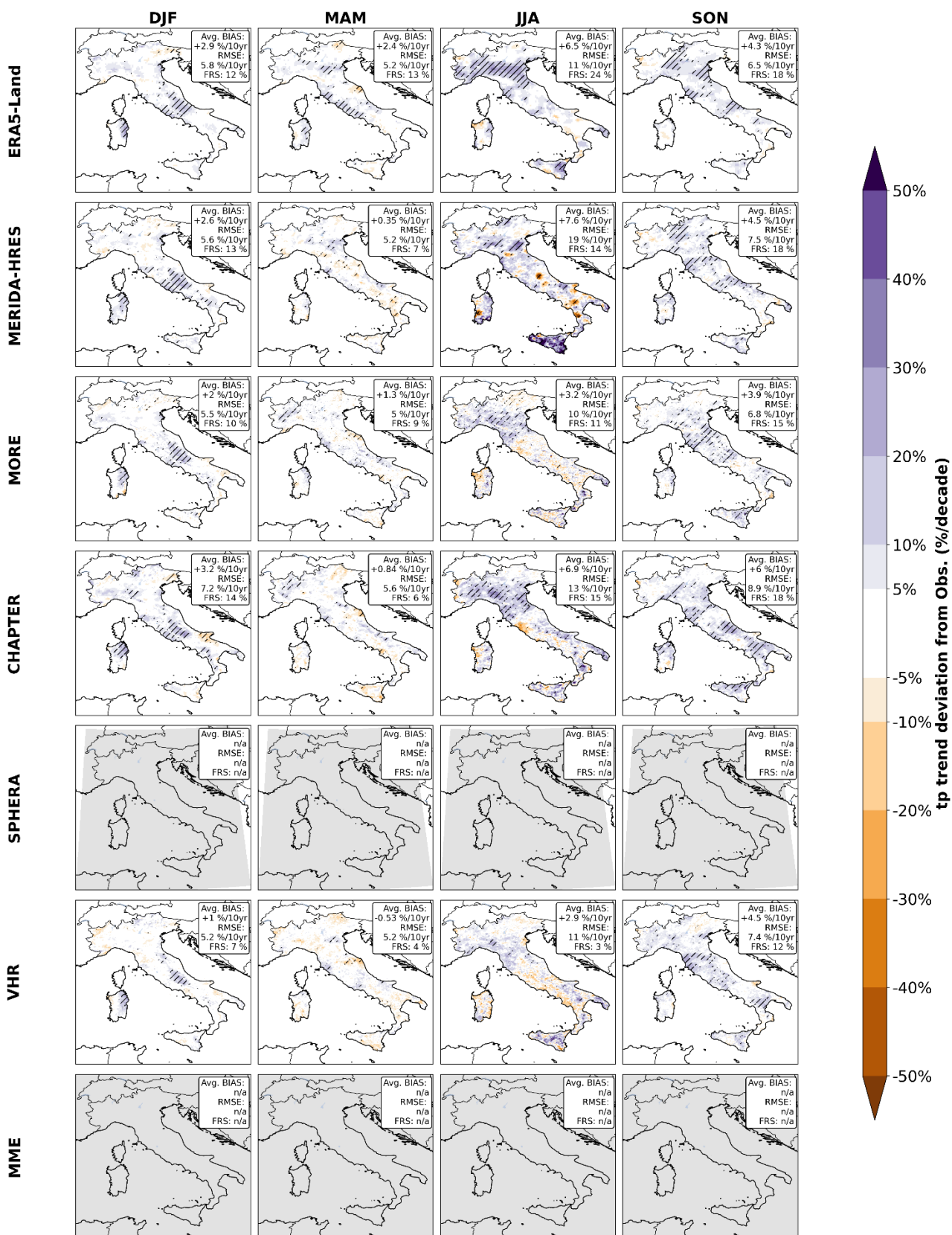


Figure S14: Maps of the trend of tp relative deviations for the period 1991-2020. Each column represents a season. Each row represents a different product (where available). The diagonal hatching highlights area with significant trends. Scores are reported in the top-right boxes.

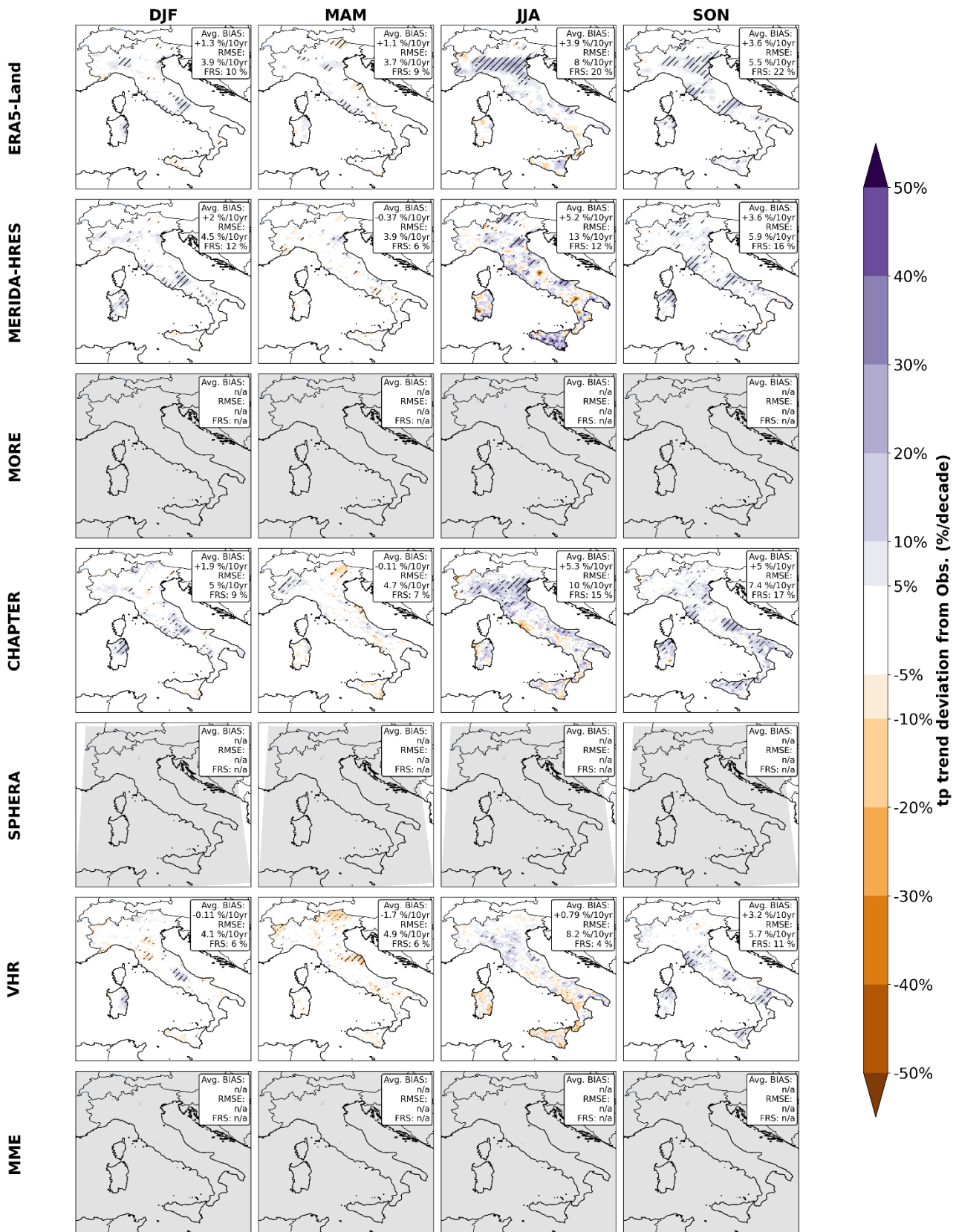


Figure S15: Maps of the trend of tp relative deviations for the period 1986-2020. Each column represents a season. Each row represents a different product (where available). The diagonal hatching highlights area with significant trends. Scores are reported in the top-right boxes.

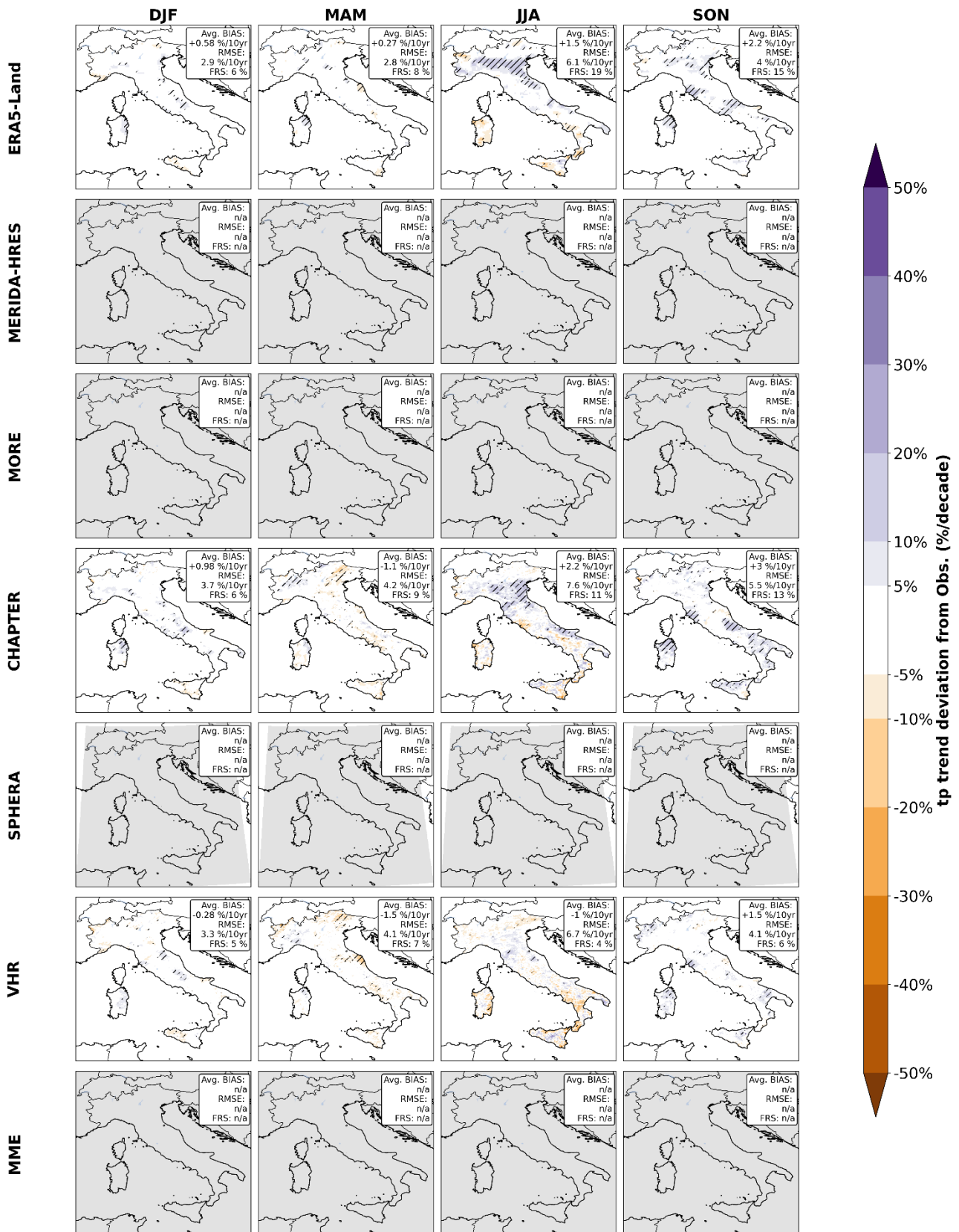


Figure S16: Maps of the trend of tp relative deviations for the period 1981-2020. Each column represents a season. Each row represents a different product (where available). The diagonal hatching highlights area with significant trends. Scores are reported in the top-right boxes.