SUPPLEMENTARY MATERIAL OF:

Convective activity within a tropical cyclone undergoing extratropical transition over a warmer ocean.

Pedro Gómez-Plasencia[1], Ernesto Javier Rodríguez-Acosta[1], Juan Jesús González-Alemán[2], Carlos Calvo-Sancho[3], Pedro Bolgiani[4], Javier Díaz-Fernández[1,2], Ana Montoro-Mendoza[1,2], María Luisa Martín[1], Íñigo Gómara[1]

Correspondence to: Pedro Gómez-Plasencia (pedrogp@uva.es)

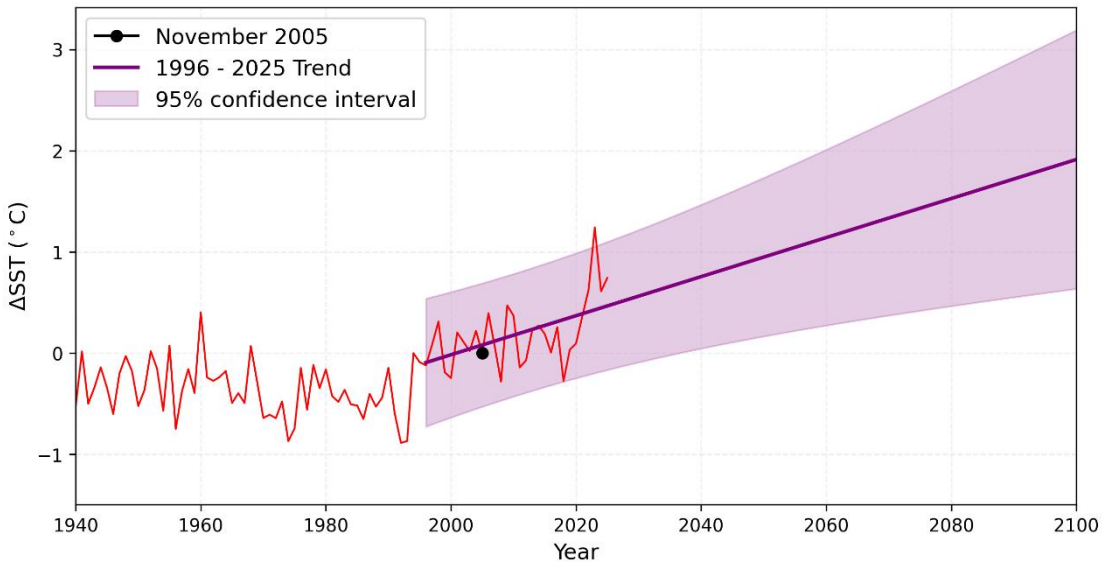


Figure S1: Evolution of the anomaly of November mean SSTs in the North Atlantic region [20º-35º N, 50º-10º W] relative to November 2005, based on the HadISST dataset. The purple line indicates the 1996-2025 trend extrapolated throughout the 21st century, with shading representing the 95% confidence interval.

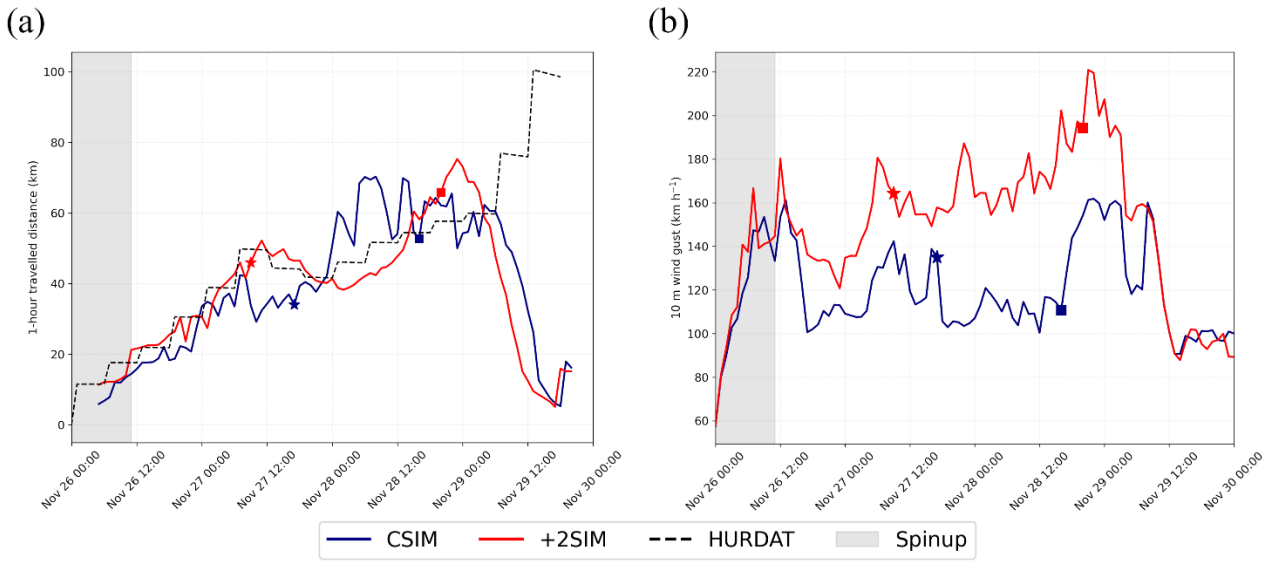


Figure S2: Comparison of (a) 1 h travelled distance (simulation results are smoothed with 10 h running means), (b) maximum 10 m wind gust, for Delta in both simulations. Stars and squares denote the beginning and the end of the ET, respectively, in both scenarios.

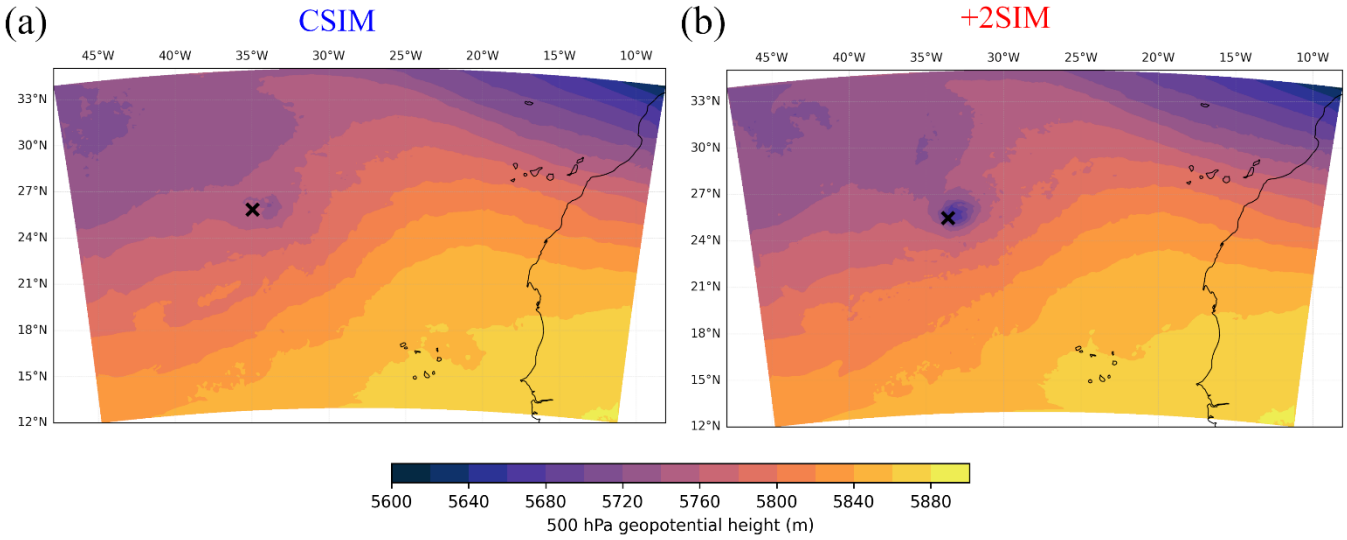


Figure S3: 500 hPa geopotential height field at 08:00 UTC 28 November for (a) CSIM, (b) +2SIM. Black cross marks for the cyclone position at that timestep.

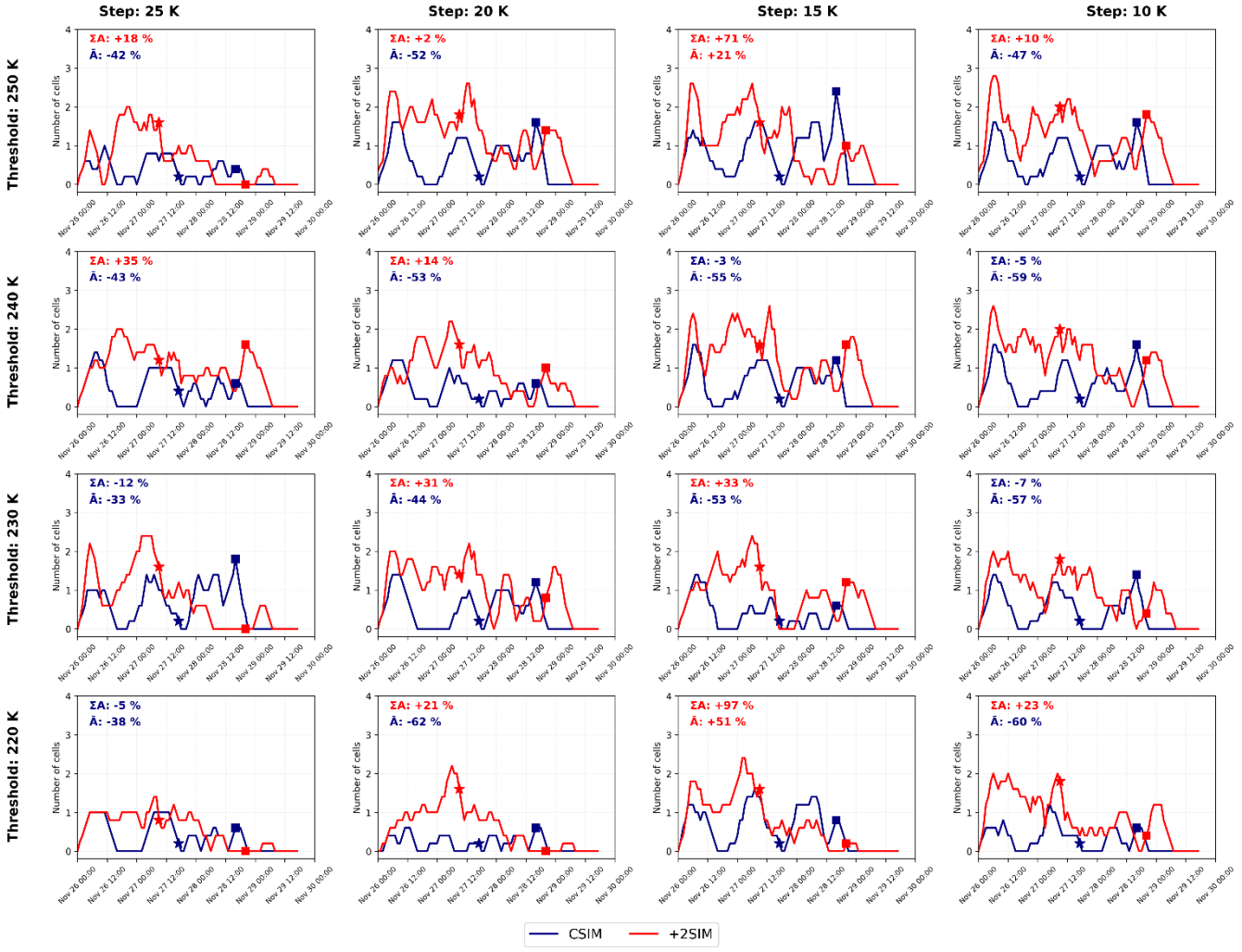
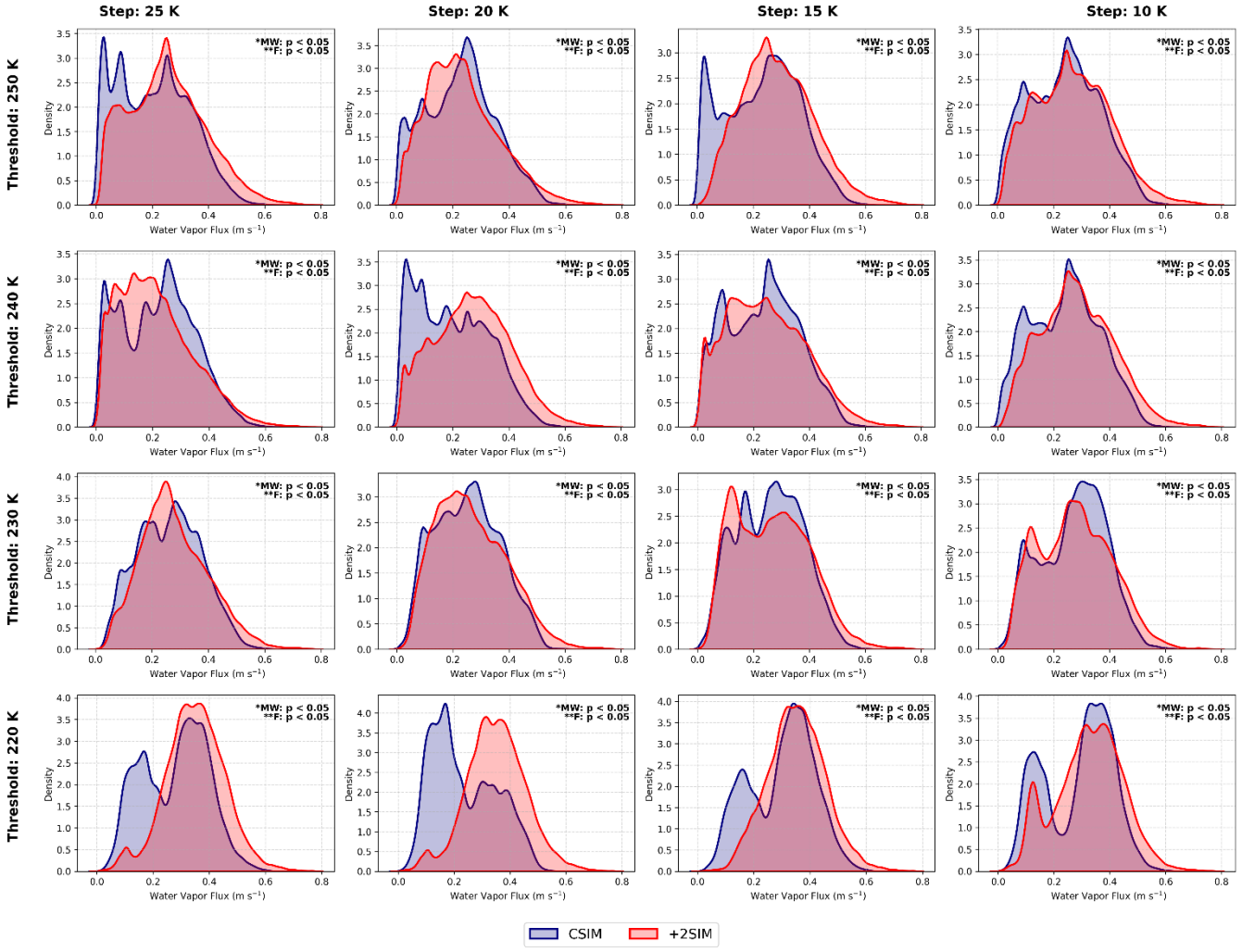
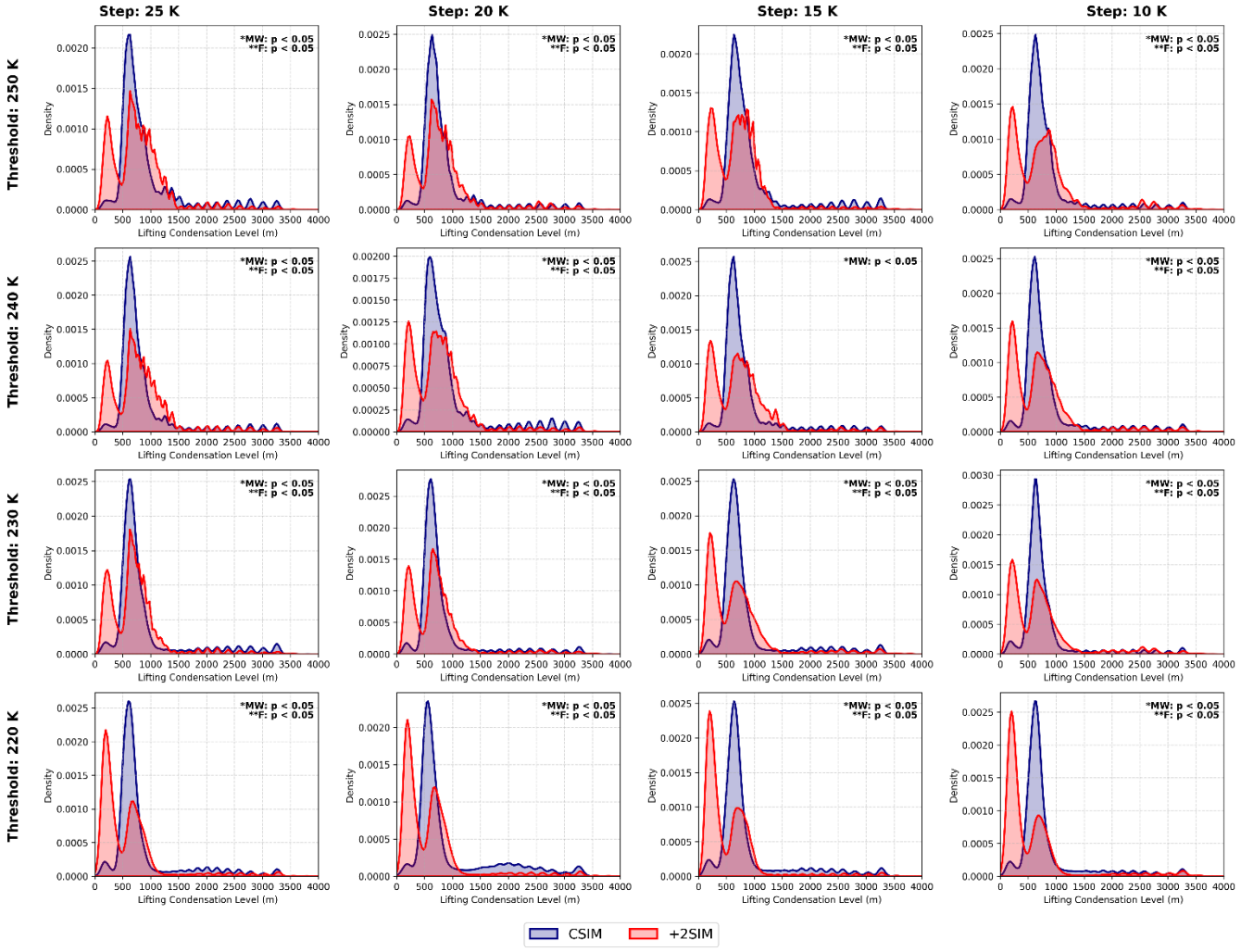


Figure S4: Evolution of the number of convective cells with CI identified in Delta in both simulations for all the BT threshold-step combinations, smoothed with 5-hour running means. In the top-left corner numbers indicate the percentage of change in the total and mean area occupied by those cells in +2SIM relative to CSIM, in red when it is an increase and blue when it is a decrease. Stars and squares denote the beginning and end of the ET, respectively, in both scenarios.



30 **Figure S5:** Comparison of the PDFs of the *WVFlux* at 925 hPa (m s^{-1}) in Delta's convective cells in both simulations for all the BT threshold-step combinations. In the top-right corner of the PDFs the symbol * denotes a significant difference in the distributions while two asterisks ** denote a significant difference in the variances, with p-values < 0.05 according to the Mann-Whitney and Fisher tests, respectively.



35 **Figure S6:** Same as Fig. S5 but for the LCL (m).

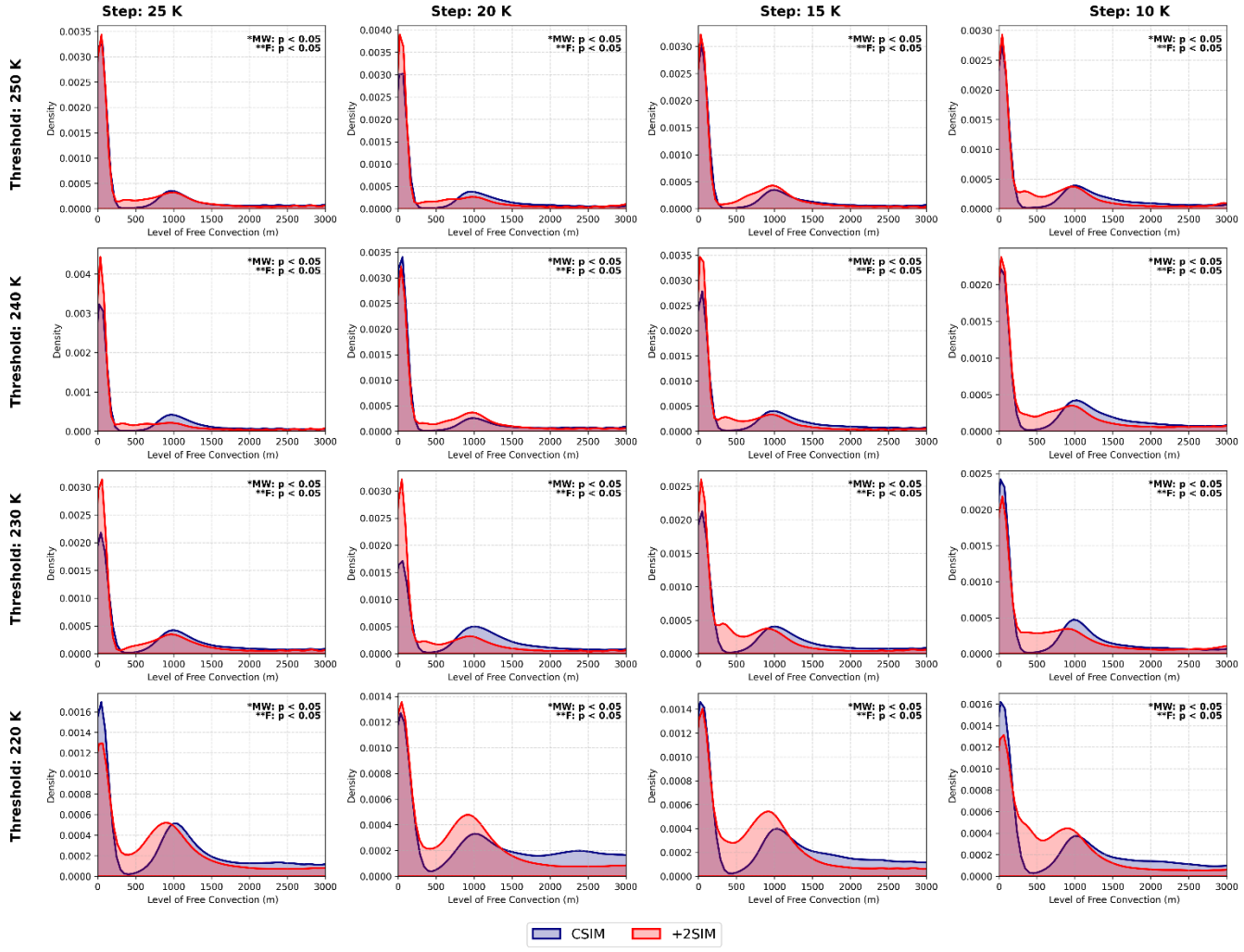


Figure S7: Same as Fig. S5 but for the LFC (m).

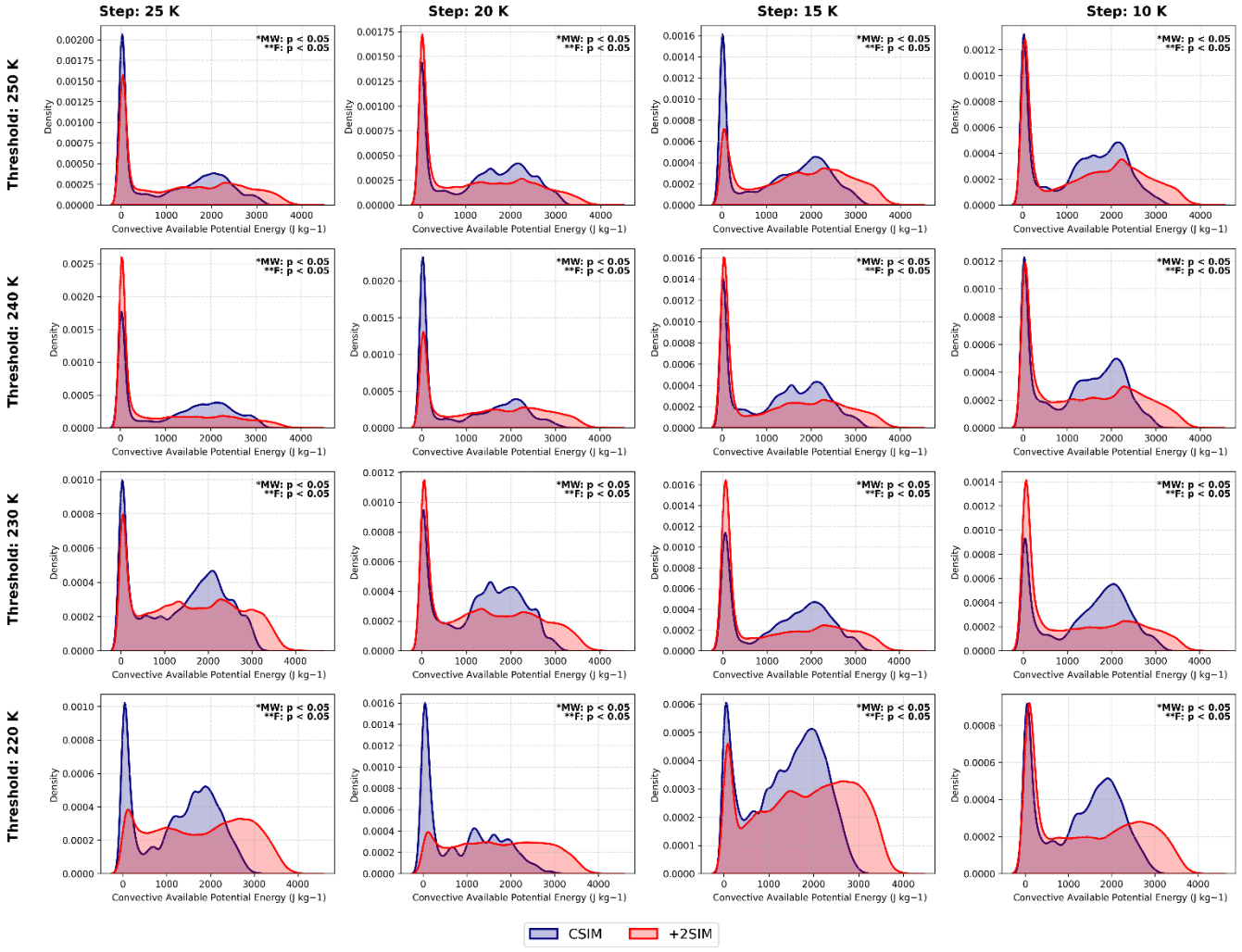


Figure S8: Same as Fig. S5 but for the CAPE (J kg^{-1}).

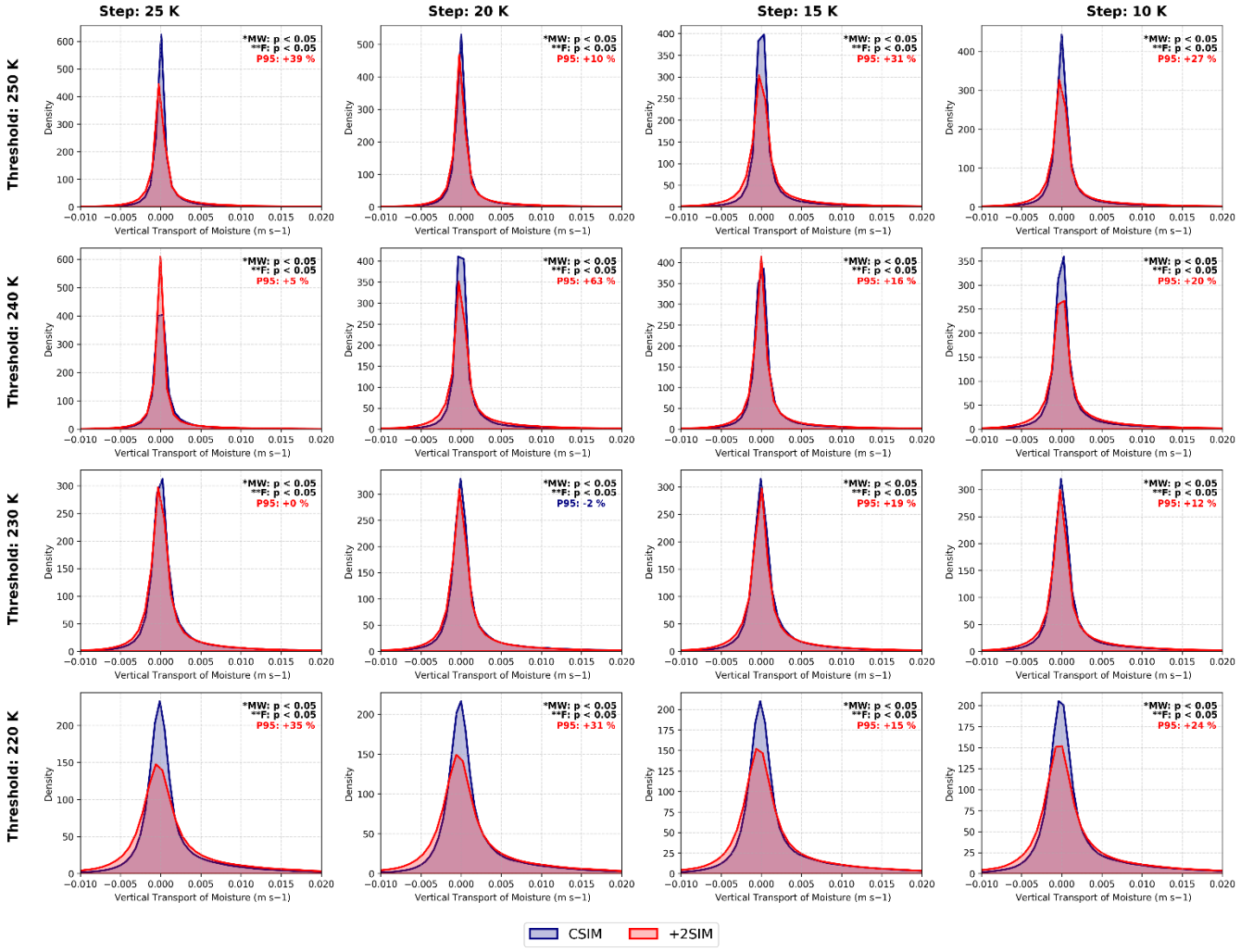


Figure S9: Same as Fig. S5 but for the *wq* at 700 hPa (m s^{-1}). In the top-right corner it is indicated the percentage of change in +2SIM relative to CSIM in the 95th percentile of the distribution, in red when it is an increase and blue when it is a decrease.

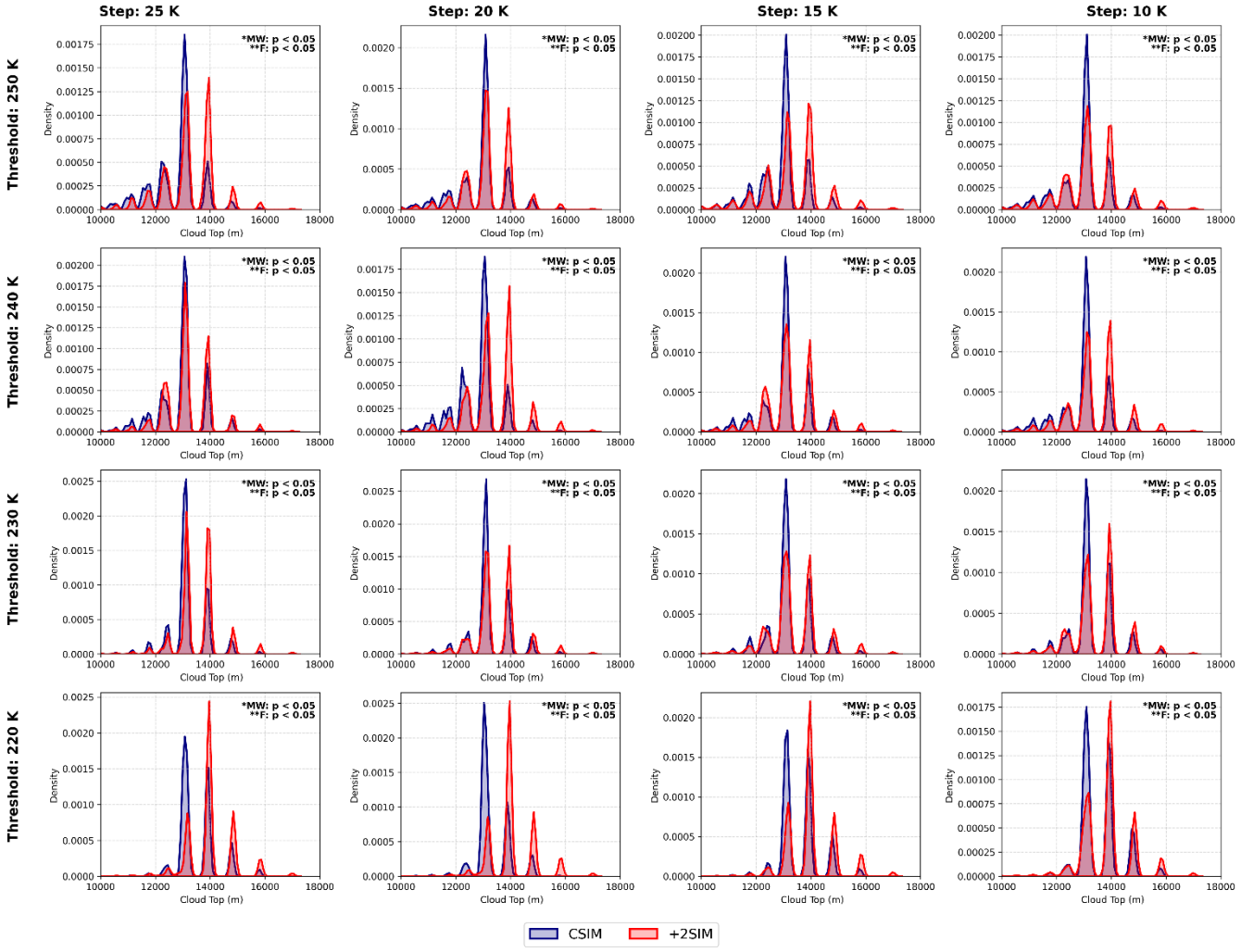


Figure S10: Same as Fig. S5 but for the CT (m).

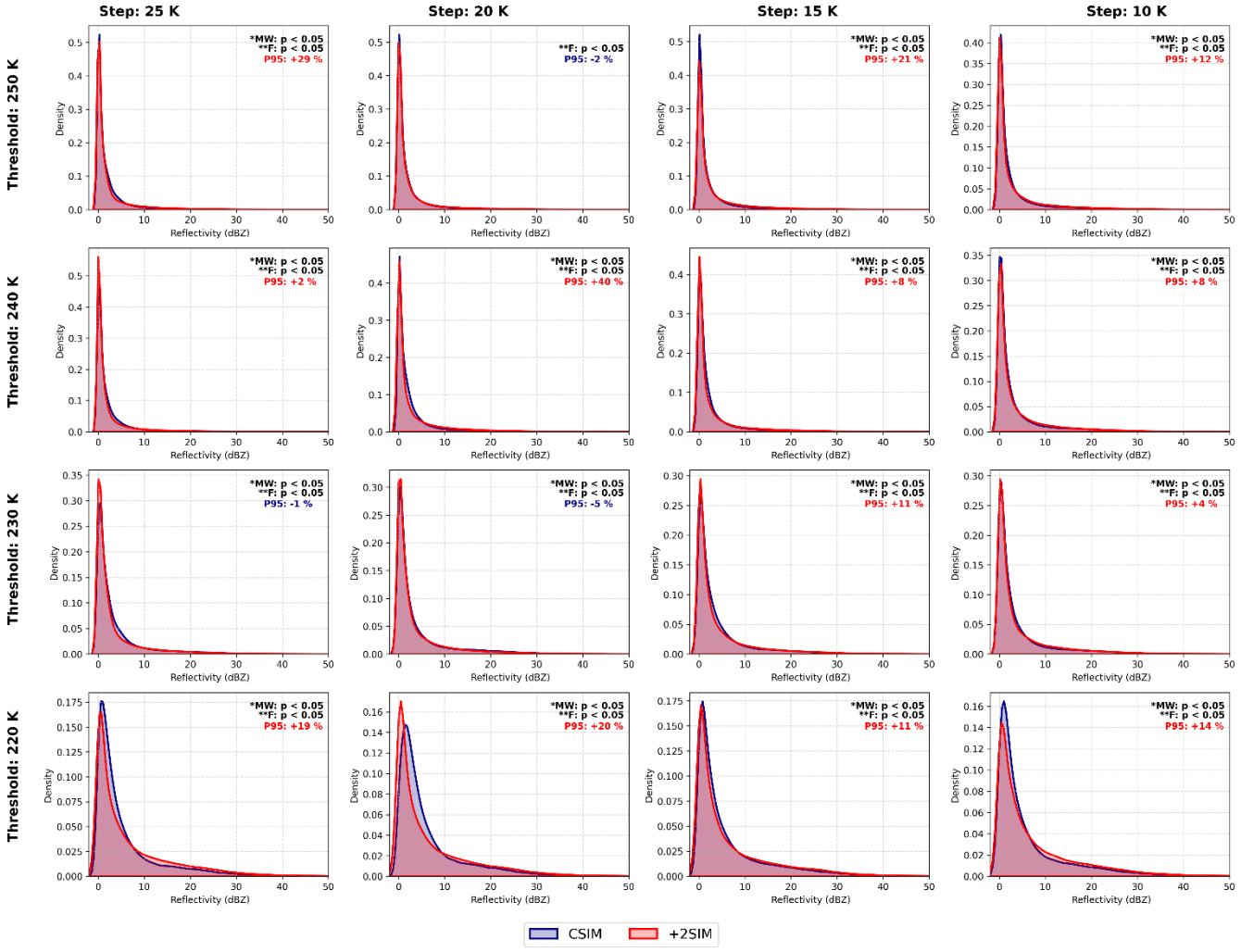


Figure S11: Same as Fig. S5 but for the Refl (dBZ). In the top-right corner it is indicated the percentage of change in +2SIM relative to CSIM in the 95th percentile of the distribution, in red when it is an increase and blue when it is a decrease.

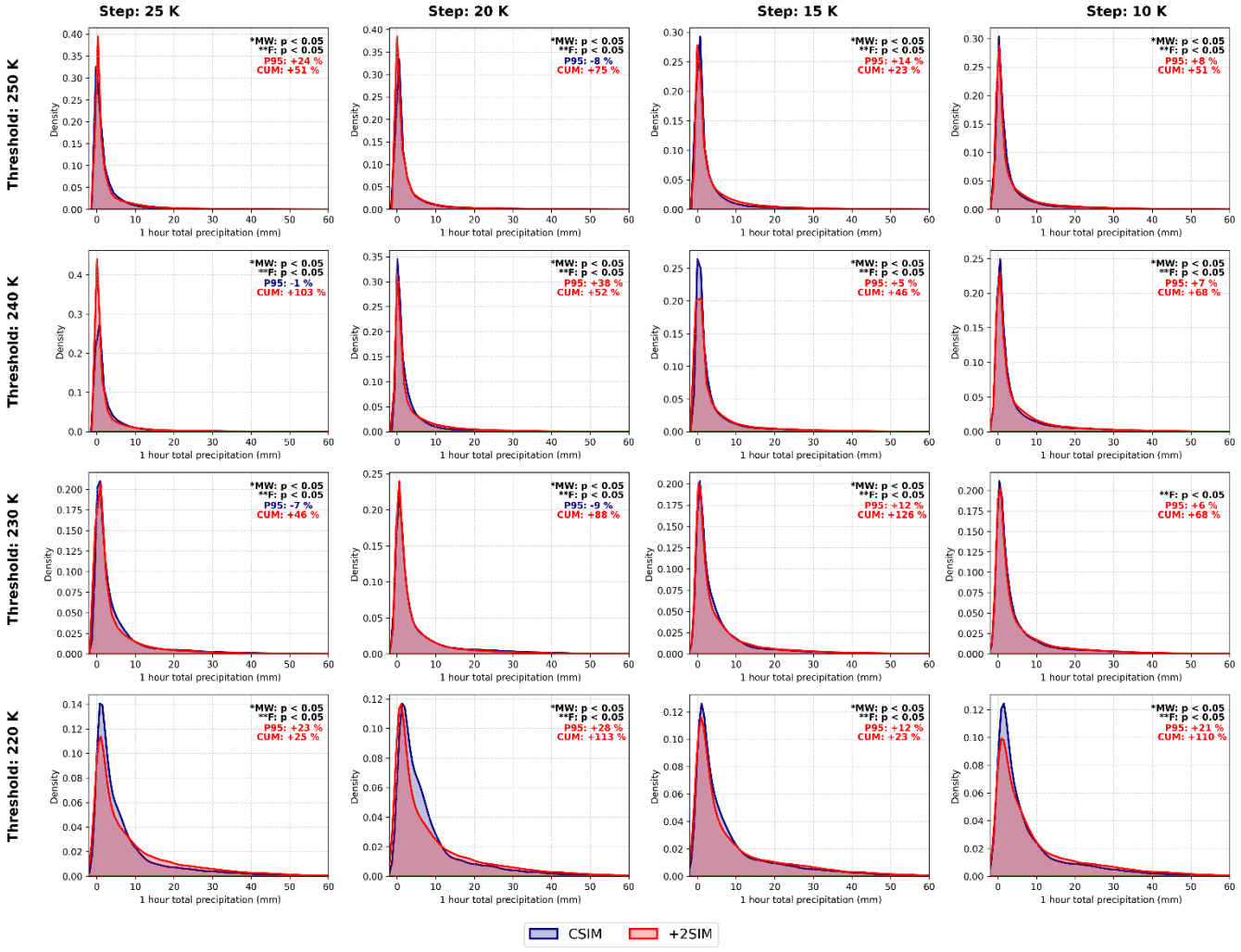


Figure S12: Same as Fig. S5 but for the mean TP (mm h^{-1}). In the top-right corner it is indicated the percentage of change in +2SIM relative to CSIM in the 95th percentile of the distribution and the total accumulated precipitation in the convective cells; in red when it is an increase and blue when it is a decrease.