

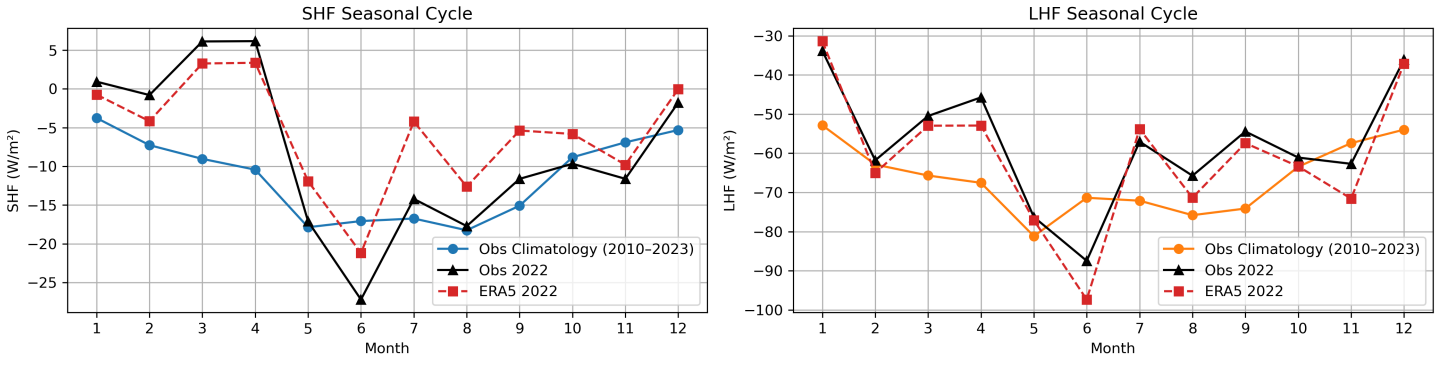


Figure 1: Seasonal cycle climatology (2010–2023) of SHF and LHF from observations, with the 2022 seasonal cycles from observations and ERA5.

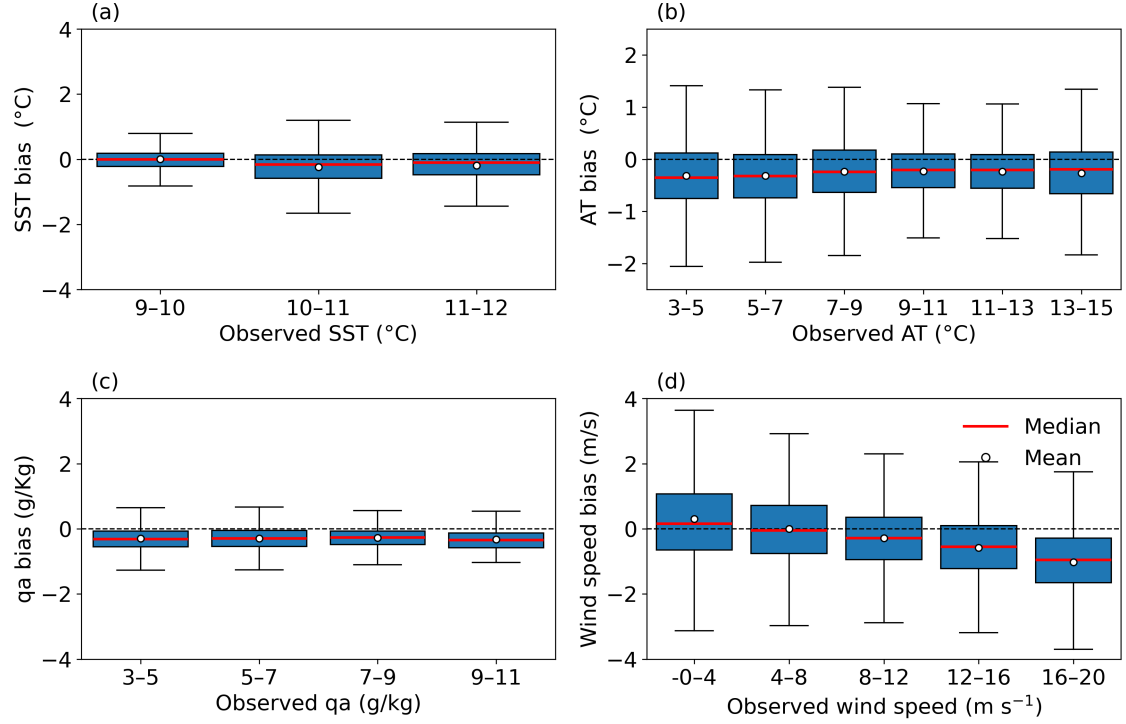


Figure 2: Box and whisker analysis of ERA5 bias on the magnitude of the observed variable: (a) SST, (b) 2-m air temperature (AT), (c) 2-m specific humidity (qa), and (d) wind speed. The x-axis shows the observed variable in different bins; the y-axis shows the mean bias (ERA5 - observations) for each bin.

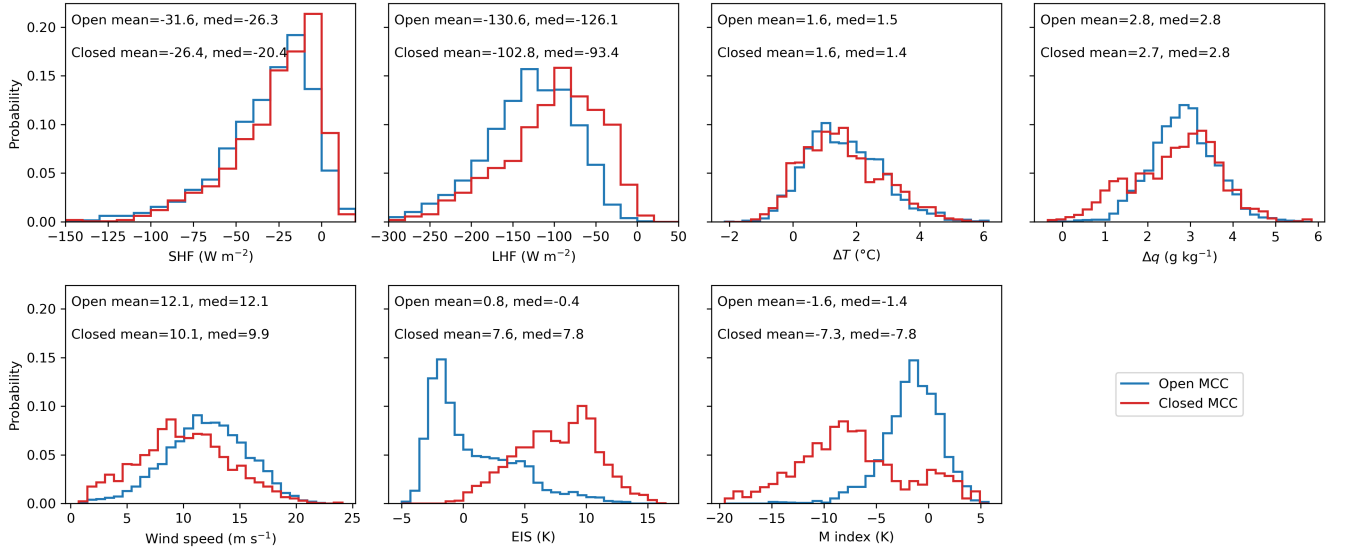


Figure 3: Probability distributions of surface fluxes (SHF, LHF), thermodynamic contrasts (ΔT , Δq), wind speed, and stability metrics (EIS, M-index) for open versus closed MCC, computed over all cases at SOFS.