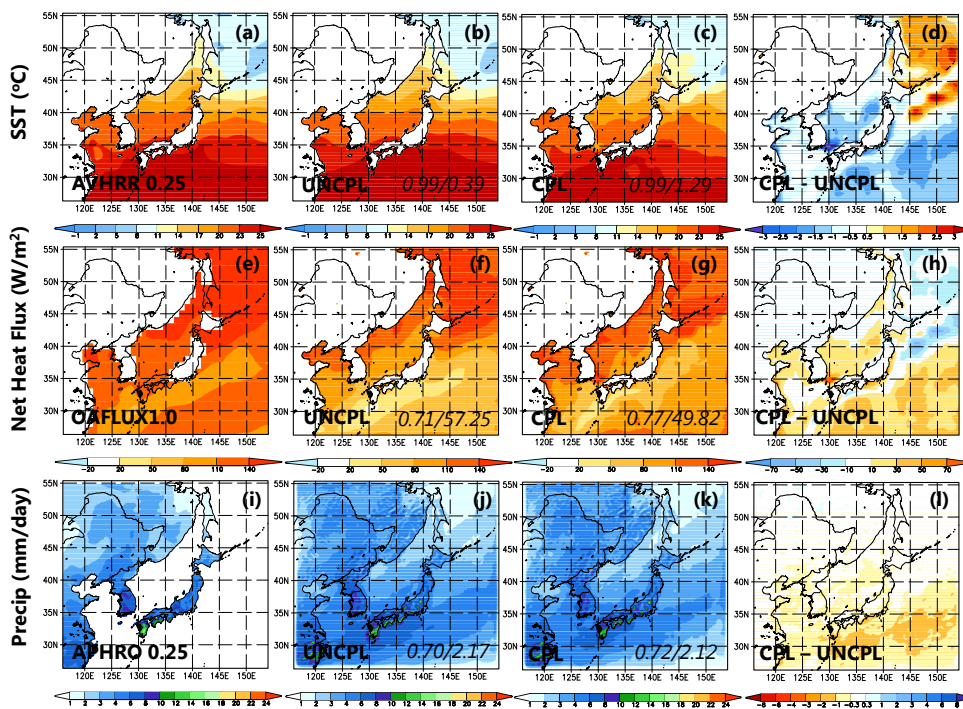Figure 2.
Climatological summertime (JJA) means of sea surface temperature (top row; a–d), net heat flux (middle row; e–h), and precipitation (bottom row; i–l). The observation data are shown in the leftmost column (a, e, and i); the second left column is UNCPL results (b, f, and j), the second right is CPL results (c, g, and k), and the rightmost column (d, h, and l) shows differences between UNCPL and CPL (CPL minus UNCPL.) The numbers in the left three columns indicate the pattern correlation (PC) and root mean square error (RMSE) of each run against the observations. The simulated net heat flux (positive downward) is calculated by the radiation fluxes and latent/sensible heat fluxes at the surface.
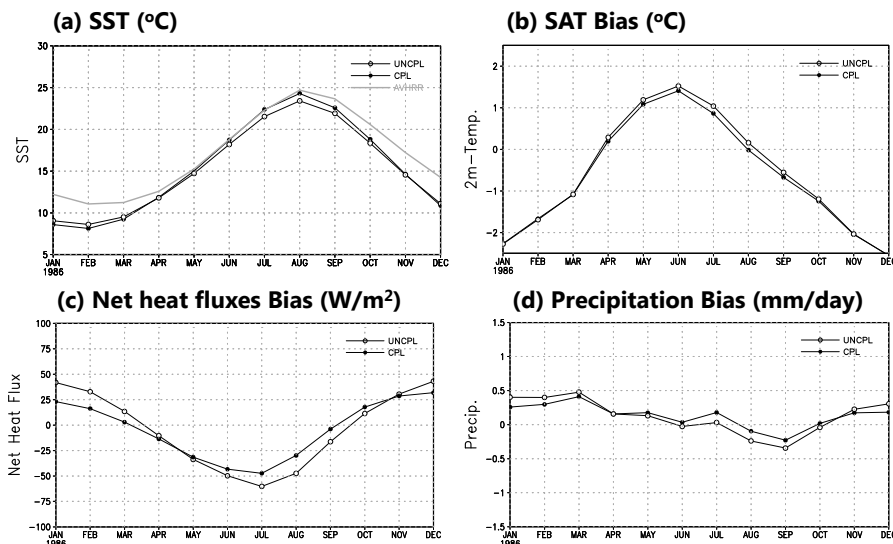

Figure 4.
Seasonality of area mean climatological variables: (a) SST, (b) surface air temperature (SAT), (c) net heat flux, and (d) precipitation. The absolute values of model runs and Advanced Very High Resolution Radiometer (AVHRR) observation (gray line) are shown for only for SST. Open symbols are CPL, and closed symbols are UNCPL.

- A regional atmosphere-ocean coupled model, RSM-ROMS, was applied to dynamically downscale the global reanalysis data over the East Asian region for the first time.
- Spatial distribution of net heat flux, precipitation, and surface air temperature were improved from the atmosphere-only run throughout the period, though sea surface temperature (SST) was degraded due to that observed SST was forced in the atmosphere-only run.
- The inconsistency between the impacts on SST ant the other variables may indicate remaining uncertainty in the coupling and/or boundary layer processes.