Spatial correlation of bias over HM from 1979-2014 climatology Annual 0.27 -0.25 0.07 0.28 0.07 0.27 -0.68 -0.26-0.48 0.07 -0.12 -0.05 -0.21 -0.82 0.09 -0.19 -0.05 -0.280.36 -0.31 -0.18 tas normalized bias -0.15 -0.46 0.06 -0.48 -0.17-0.1 -0.15 -0.08 -0.69 -0.71 -0.66 -0.48-0.58 -0.44-0.46 -0.62 -0.31 -0.45 -0.1-0.64 -0.11 -0.21 -0.290.04 -0.07 -0.09 -0.53tas bias / snc bias --0.07 -0.24tas bias / pr bias -0.38 0.16 -0.120.07 0.02 0.11 0.05 0.22 0.04 0.01 0.13 -0.2 -0.01 0.25 0.15 0.21 0.17 0.44 -0.210.26 -0.230.11 0.13 0.14 0.07 -0.09 0.41 -0.51-0.48 -0.52-0.44 -0.18 -0.34-0.18 -0.3-0.22 -0.06-0.03 -0.46 -0.55 0.17 -0.28 -0.64 -0.32 -0.37-0.31-0.05 -0.18 **-0.43** snc bias / pr bias -0.28 -0.34-0.090.19 -0.08 0.19 -0.64 -0.8 -0.62 -0.12-0.52 -0.31-0.4-0.25 -0.32 -0.43 0.27 -0.28 -0.13 -0.14-0.310.23 -0.2 -0.02 -0.15tas bias / elevation --0.36 0.78 0.56 0.79 0.78 0.53 0.51 0.69 0.37 0.41 0.5 0.77 snc bias / elevation -0.46 0.64 0.62 0.55 0.79 0.59 0.64 0.51 0.78 0.78 0.4 0.41 0.66 0.46 0.01 0.58 0.39 -0.55 -0.27 -0.59 -0.170.08 -0.49 0.1 0.18 -0.37 -0.36 -0.4 -0.29 -0.68 -0.25 0.1 -0.51 -0.49 -0.040.06 -0.1-0.43 -0.77 -0.22 pr bias / elevation -**DJFMA** 0.08 -0.27-0.070.12 -0.06 -0.37-0.07 -0.11 -0.24 -0.04 -0.2-0.09 -0.330.19 -0.39 -0.24 -0.01-0.23 0.11 -0.72-0.7-0.510.11 -0.73 0.15 tas normalized bias -0.52 -0.05 -0.52 -0.47-0.34-0.45-0.33 -0.79 -0.78 -0.46-0.66 -0.4-0.42 | -0.47 -0.01 -0.24 -0.17 -0.71 -0.31 -0.29 -0.35 -0.17 -0.21-0.29 -0.34tas bias / snc bias --0.650.18 -0.06 -0.030.04 -0.07 -0.01 0.19 0.32 0.19 -0.09 -0.16 -0.24-0.1 0.21 0.2 -0.05 0.18 0.16 -0.22 -0.06-0.16 -0.28 0.09 -0.11 0.06 0.06 tas bias / pr bias --0.39 -0.47 -0.31 0.82 0.13 -0.26-0.26-0.25-0.16 -0.12 -0.150.04 0.05 0.01 0.08 -0.06 l 0.35 -0.5-0.16-0.410.23 -0.18 0.02 0.3 -0.4snc bias / pr bias -0.16 -0.45 0.23 -0.36 -0.30.02 -0.290.04 -0.72 -0.89-0.72 -0.1-0.55 -0.37-0.44 -0.33 -0.44 -0.45 0.14 -0.4-0.27-0.22-0.36-0.31 -0.08 -0.12tas bias / elevation -0.71 0.68 0.78 0.68 0.62 0.65 0.61 0.78 0.69 0.78 0.59 0.57 0.41 0.44 -0.01 0.36 0.51 0.73 0.31 0.4 0.5 0.44 0.5 0.36 snc bias / elevation --0.34-0.23-0.38 -0.30.25 0.18 -0.12 -0.310.01 0 -0.39 0.04 0.14 -0.17-0.32 -0.37 -0.67 -0.26 0.3 -0.38 0.05 -0.14-0.05 -0.32 -0.39 pr bias / elevation -**JJAS** tas normalized bias --0.02-0.190.52 0.29 0.56 -0.57-0.97 -0.43-0.45 -0.05 -0.290.08 -0.12 -1 0.55 0.31 -0.2-0.04-0.18-0.2 -0.09 -0.4-0.59-0.40.02 0.14 0.02 -0.28 -0.48 -0.23 -0.53-0.43-0.46 -0.42 -0.57-0.19 -0.62 0.04 -0.27-0.16 -0.09 -0.03 tas bias / snc bias --0.23-0.1-0.22 -0.16 0.06 0.25 -0.33-0.16 -0.09 0.29 0.14 0.43 -0.280.22 -0.27-0.270.17 tas bias / pr bias -0.050.04 0.1 -0.11 -0.10.29 0.07 0.15 0.58 -0.48 -0.51 -0.39 -0.31 -0.35-0.57 -0.59 -0.66 0.03 -0.37 -0.47 -0.29 -0.36 -0.41-0.35 -0.59 -0.49snc bias / pr bias -0.37 0.05 -0.67 -0.67 -0.3-0.15-0.12 -0.64 -0.39 -0.33 -0.35 -0.48 -0.25 -0.03 -0.38 -0.25 -0.08 -0.35 0.12 0.32 0.14 0.32 -0.17 -0.35 -0.150.41 -0.08 0.03 -0.09 0.29 0.09 -0.18 -0.25 tas bias / elevation -0.63 0.55 0.52 0.55 0.52 0.34 0.55 0.55 0.66 0.69 0.59 0.54 0.68 0.62 0.64 0.56 0.74 0.59 0.56 0.7 0.85 0.6 0.57 0.68 0.52 0.57 snc bias / elevation --0.64 -0.67 -0.52 -0.82 -0.090.37 0.6 -0.25 -0.2 0.14 -0.37 0.17 0.2 -0.37 -0.35-0.36 -0.21 -0.64 -0.13 0.18 -0.35 -0.54 -0.06 0.22 -0.14 -0.14pr bias / elevation -CAS-ESM2-0 CESM2 BCC-CSM2-MR CESM2-FV2 CESM2-WACCM CESM2-WACCM-FV2 CNRM-CM6-1-HR **CanESM5** GISS-E2-1-G GISS-E2-1-H HadGEM3-GC31-MM PSL-CM6A-LR MIROC6 MPI-ESM1-2-HR MPI-ESM1-2-LR MRI-ESM2-0 NorESM2-LM SAM0-UNICON **UKESM1-0-LL BCC-ESM1** CNRM-CM6-1 CNRM-ESM2-1 GFDL-CM4 HadGEM3-GC31-LL MIROC-ES2L TaiESM1