

Supplement of Geosci. Model Dev., 13, 4595–4637, 2020  
<https://doi.org/10.5194/gmd-13-4595-2020-supplement>  
© Author(s) 2020. This work is distributed under  
the Creative Commons Attribution 4.0 License.



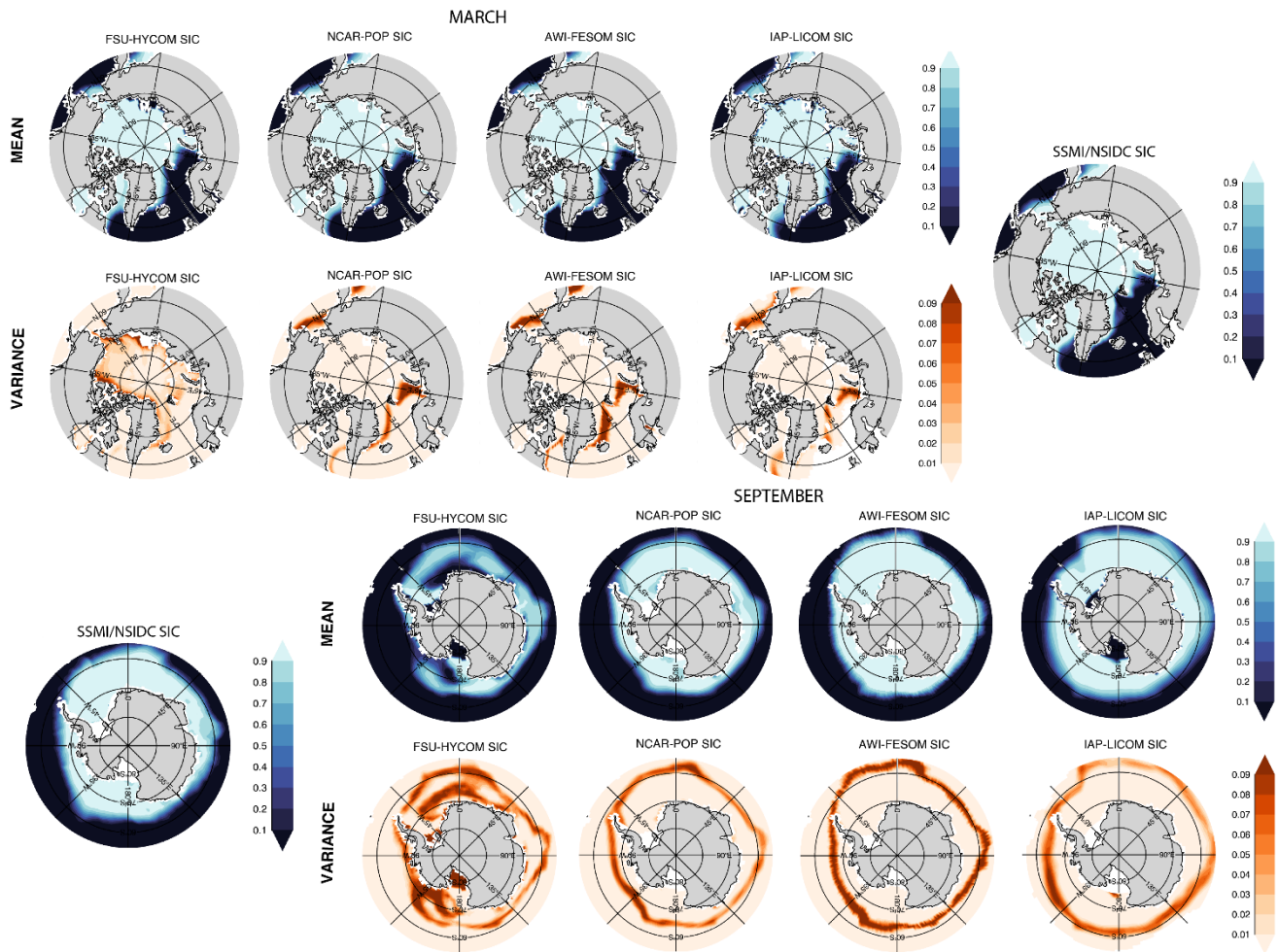
*Supplement of*

## **Impact of horizontal resolution on global ocean–sea ice model simulations based on the experimental protocols of the Ocean Model Intercomparison Project phase 2 (OMIP-2)**

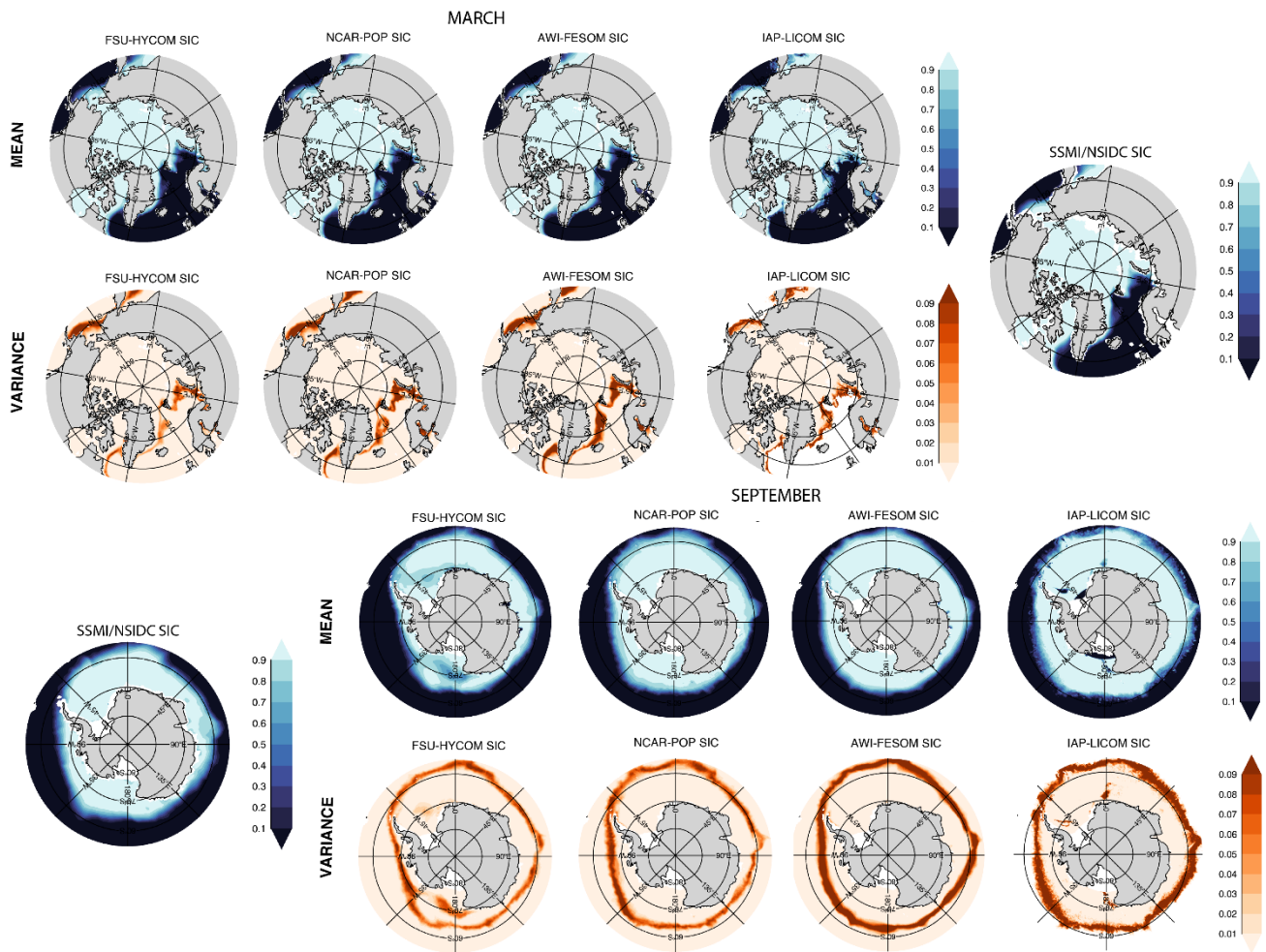
**Eric P. Chassignet et al.**

*Correspondence to:* Eric P. Chassignet (echassignet@fsu.edu)

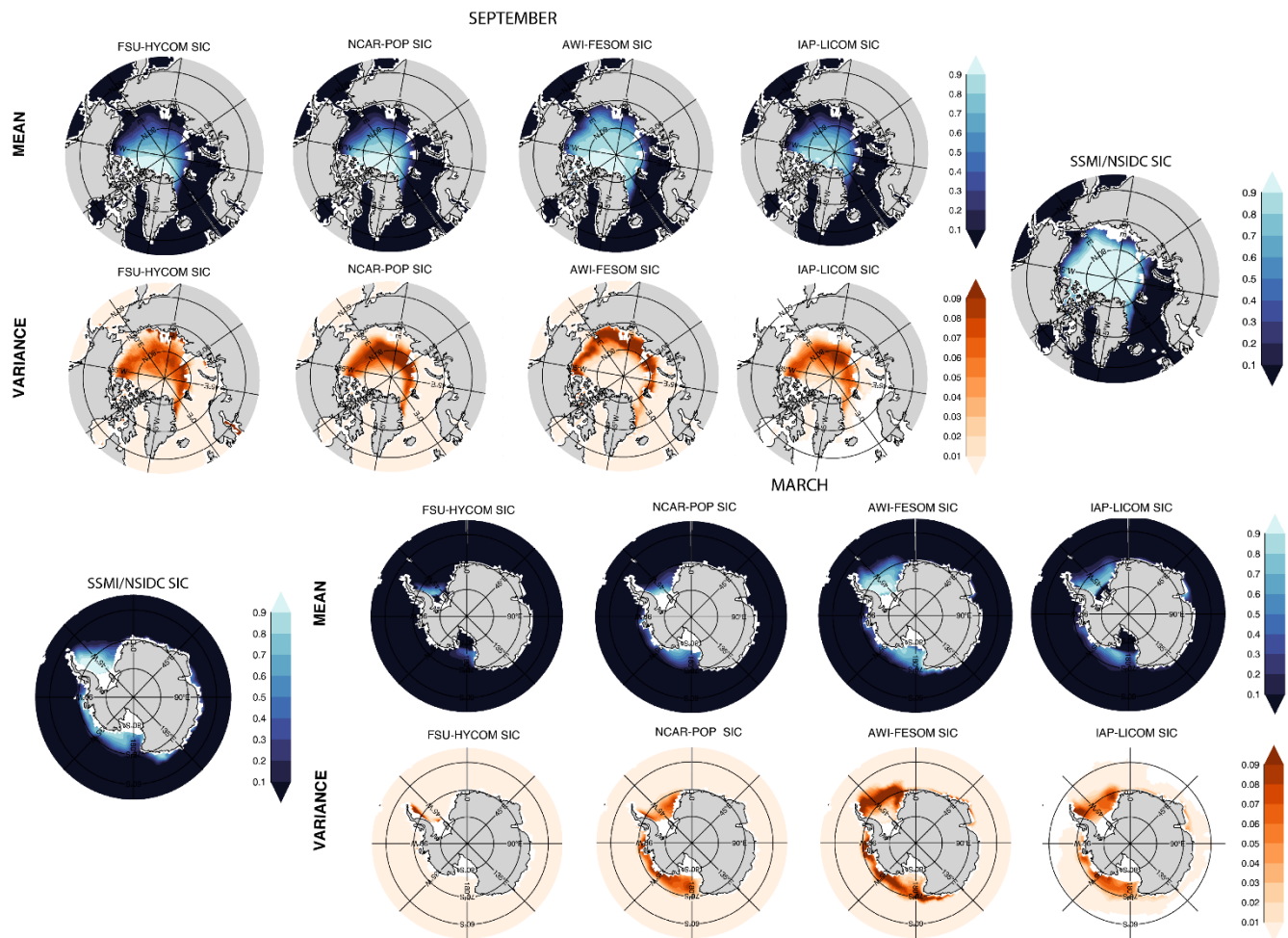
The copyright of individual parts of the supplement might differ from the CC BY 4.0 License.



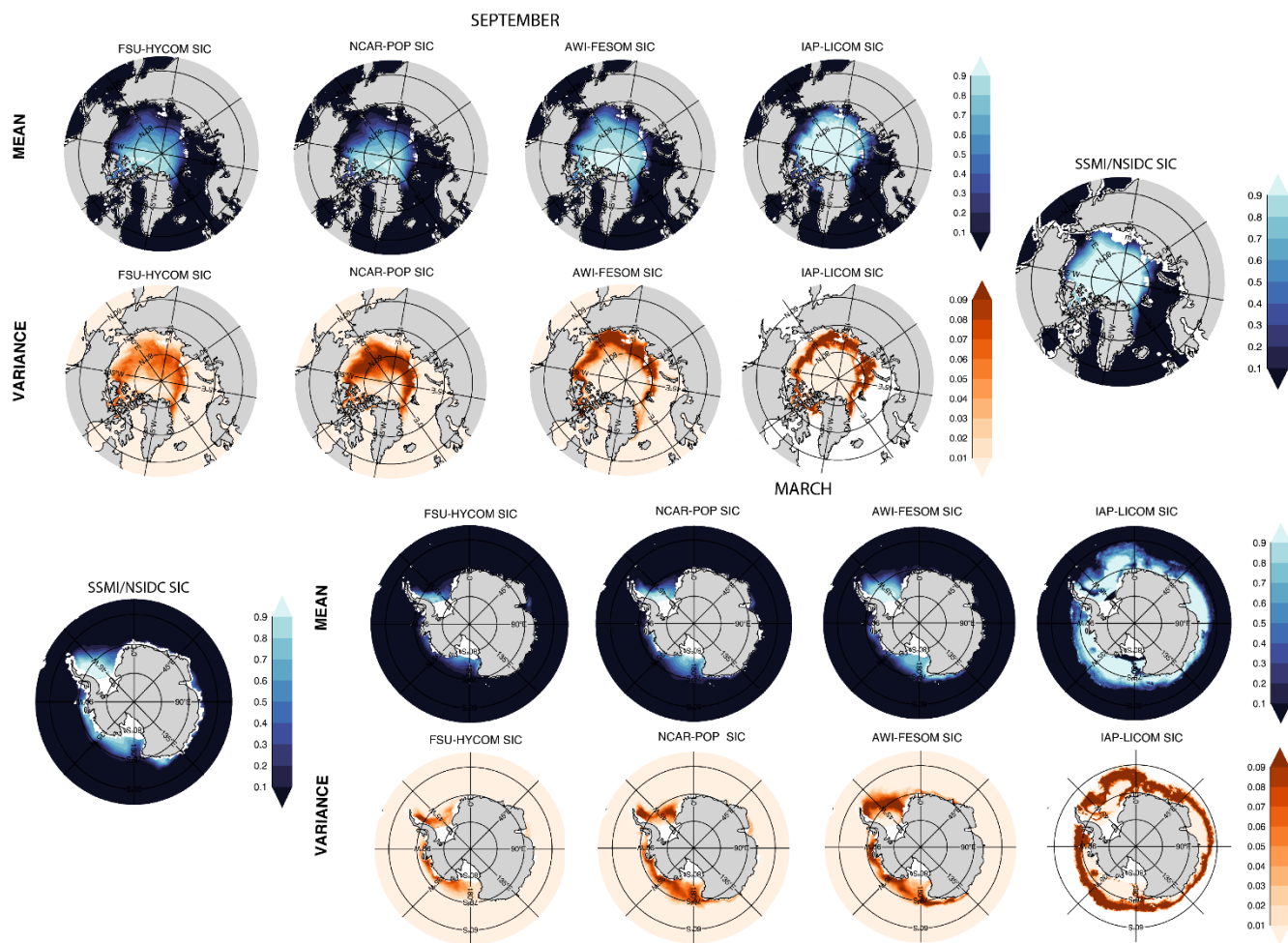
**Figure S1: 1980-2018 Arctic and Antarctic winter mean sea ice concentration (SIC) and variance for the low-resolution experiments and 1980-2018 mean SIC from passive microwave satellites (top right and bottom left).**



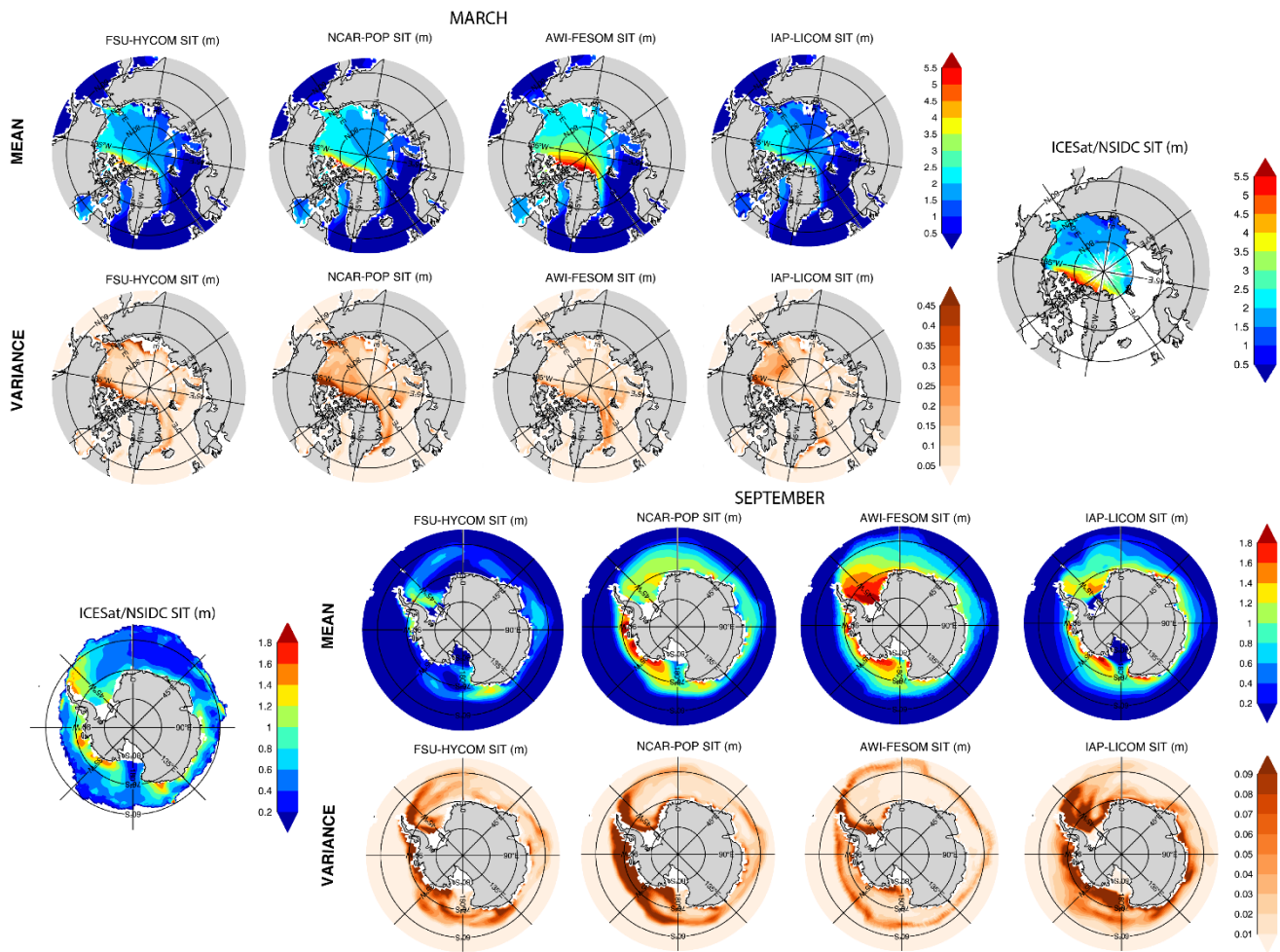
**Figure S2: 1980-2018 Arctic and Antarctic winter mean sea ice concentration (SIC) and variance for the high-resolution experiments and 1980-2018 mean SIC from passive microwave satellites (top right and bottom left).**



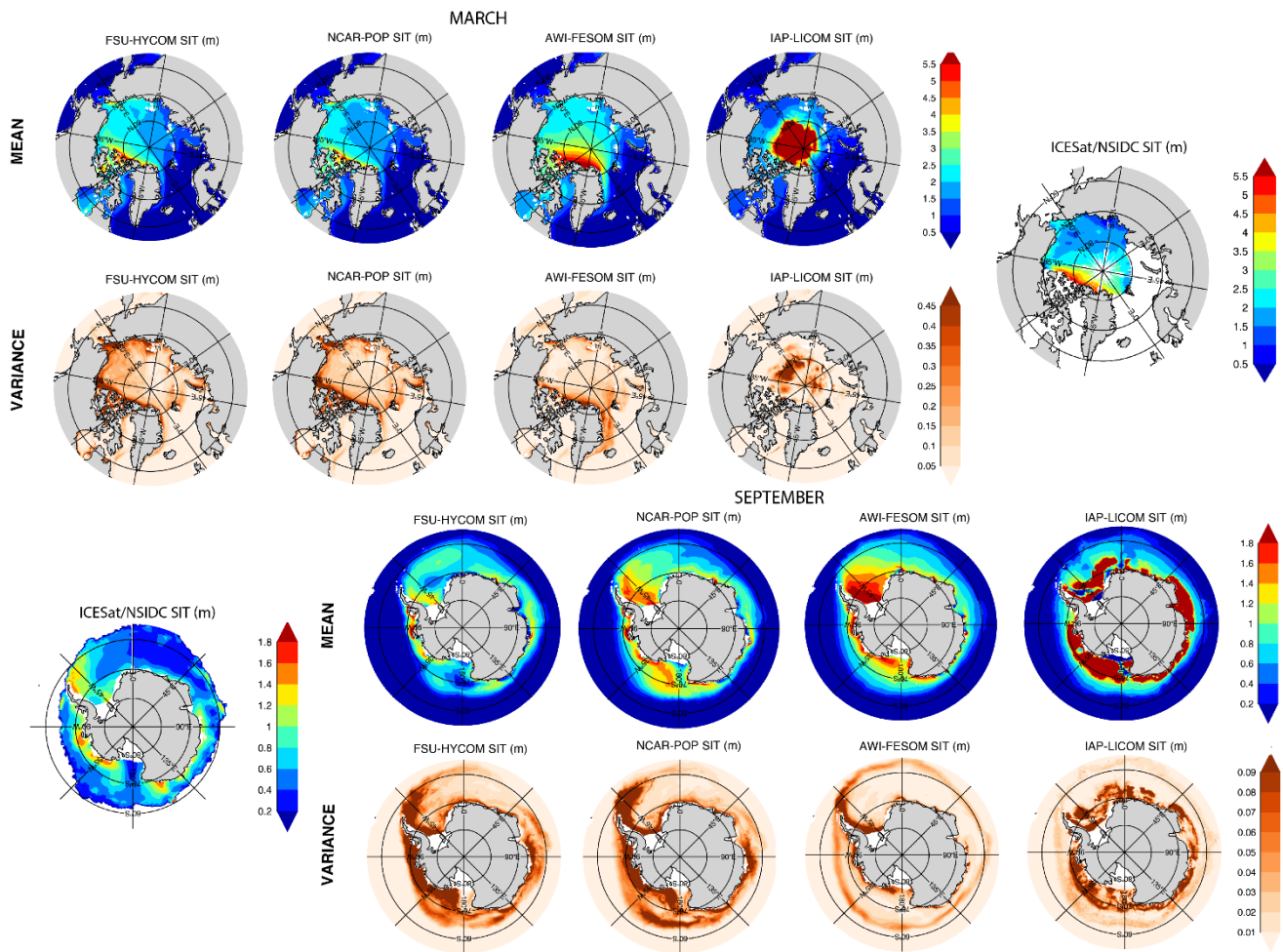
**Figure S3: 1980-2018 Arctic and Antarctic summer mean sea ice concentration (SIC) and variance for the low-resolution experiments and 1980-2018 mean SIC from passive microwave satellites (top right and bottom left).**



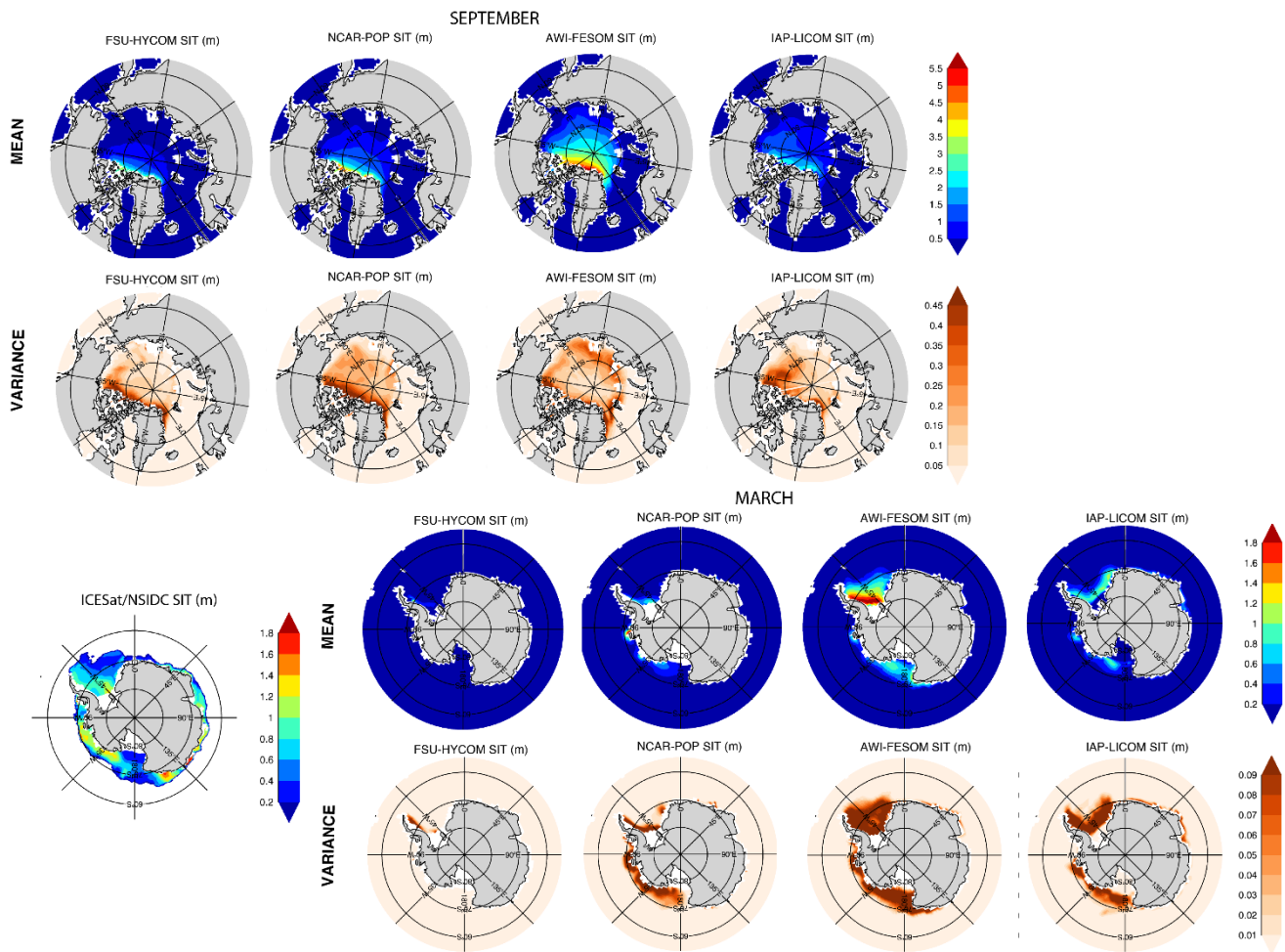
**Figure S4: 1980-2018 Arctic and Antarctic summer mean sea ice concentration (SIC) and variance for the high-resolution experiments and 1980-2018 mean SIC from passive microwave satellites (top right and bottom left).**



**Figure S5: 1980-2018 Arctic and Antarctic winter mean sea ice thickness (SIT) and variance for the low-resolution experiments and 2003-2007 mean SIT from ICESat (top right and bottom left).**

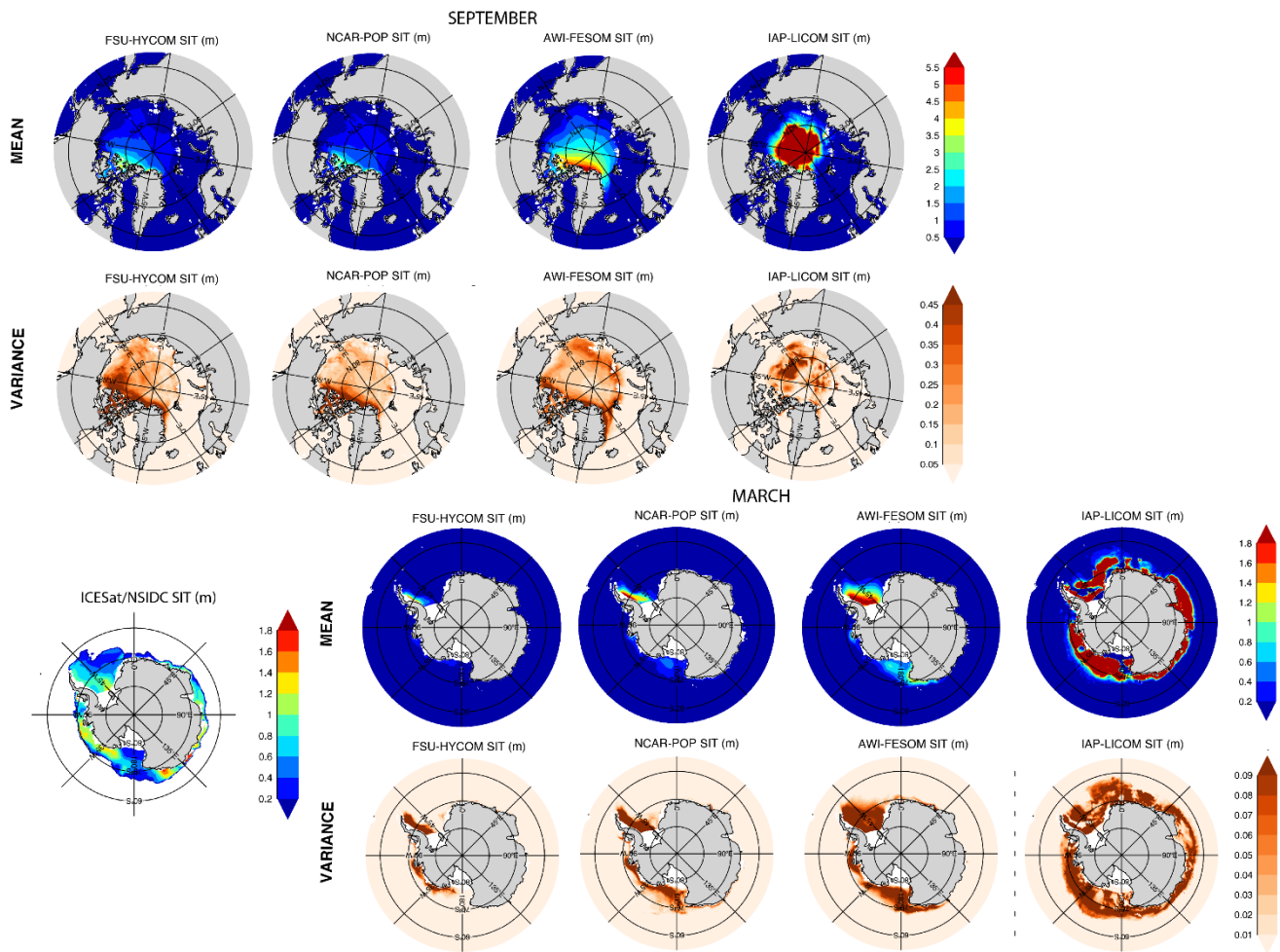


**Figure S6: 1980-2018 Arctic and Antarctic winter mean sea ice thickness (SIT) and variance for the high-resolution experiments and 2003-2007 mean SIT from ICESat (top right and bottom left).**

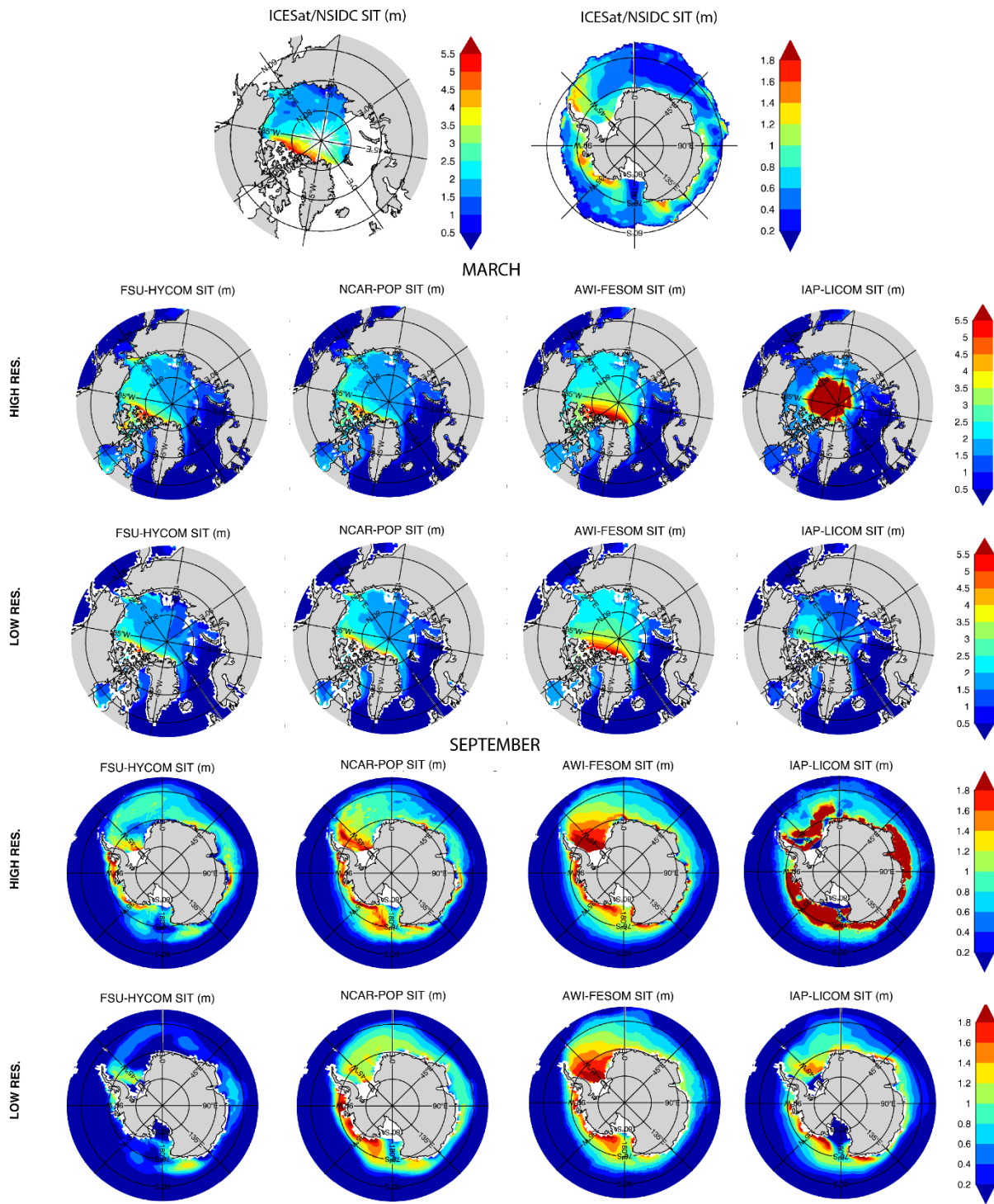


**Figure S7: 1980-2018 Arctic and Antarctic summer mean sea ice thickness (SIT) and variance for the low-resolution experiments and 2003-2007 mean SIT from ICESat (bottom left; Arctic summer not available).**

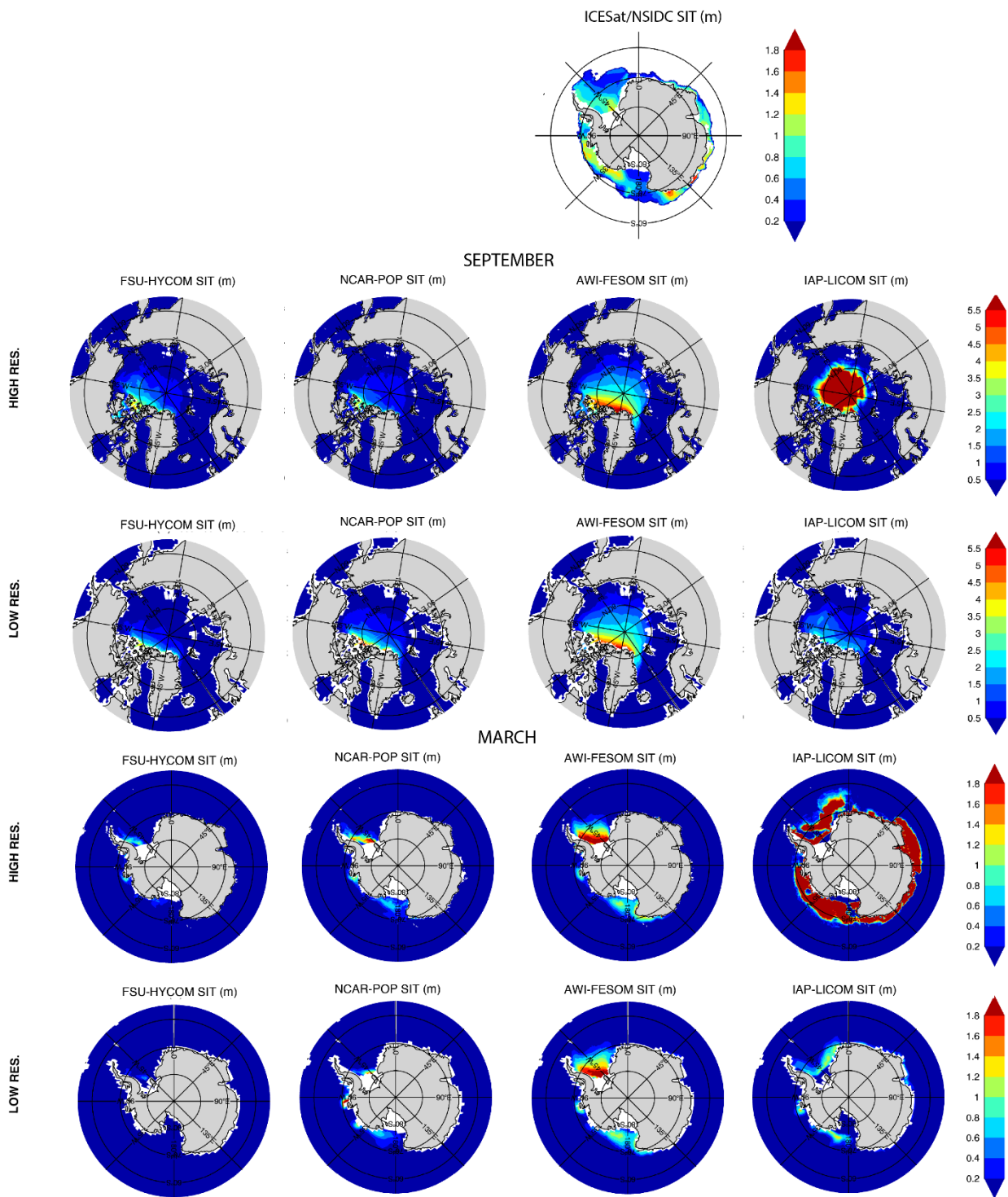




**Figure S8: 1980-2018 Arctic and Antarctic summer mean sea ice thickness (SIT) and variance for the high-resolution experiments and 2003-2007 mean SIT from ICESat (bottom left; Arctic summer not available).**



**Figure S9: (Top panel) 2003-2007 winter Arctic and Antarctic sea ice thickness (SIT) from ICESat. (Bottom panels) 2003-2007 modeled Arctic and Antarctic winter mean SIT.**



**Figure S10: (Top panel) 2003-2007 summer Antarctic sea ice thickness (SIT) from ICESat (not available for the Arctic). (Bottom panels) 2003-2007 modeled Arctic and Antarctic summer mean SIT.**

| <b>Variables</b>         | <b>Input4MIPS datasets</b>  |
|--------------------------|---|
| Specific Humidity        | <b>input4MIPs.CMIP6.OMIP.MRI.MRI-JRA55-do-1-4-0.atmos.3hrPt.huss.gr</b> |
| Precipitation solid      | <b>input4MIPs.CMIP6.OMIP.MRI.MRI-JRA55-do-1-4-0.atmos.3hr.prsn.gr</b>   |
| Precipitation liquid     | <b>input4MIPs.CMIP6.OMIP.MRI.MRI-JRA55-do-1-4-0.atmos.3hr.prra.gr</b>   |
| Longwave down radiation  | <b>input4MIPs.CMIP6.OMIP.MRI.MRI-JRA55-do-1-4-0.atmos.3hr.rlds.gr</b>   |
| Shortwave down radiation | <b>input4MIPs.CMIP6.OMIP.MRI.MRI-JRA55-do-1-4-0.atmos.3hr.rsds.gr</b>   |
| Air temperature          | <b>input4MIPs.CMIP6.OMIP.MRI.MRI-JRA55-do-1-4-0.atmos.3hrPt.tas.gr</b>  |
| U10                      | <b>input4MIPs.CMIP6.OMIP.MRI.MRI-JRA55-do-1-4-0.atmos.3hrPt.uas.gr</b>  |
| V10                      | <b>input4MIPs.CMIP6.OMIP.MRI.MRI-JRA55-do-1-4-0.atmos.3hrPt.vas.gr</b>  |
| Rivers                   | <b>input4MIPs.CMIP6.OMIP.MRI.MRI-JRA55-do-1-4-0.land.day.friver.gr</b>  |

**Table S1: Input4MIPS datasets**