

SST and Sea Ice Boundary Conditions for CMIP6 – AMIP Simulations

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Nineteenth Session of WGCM

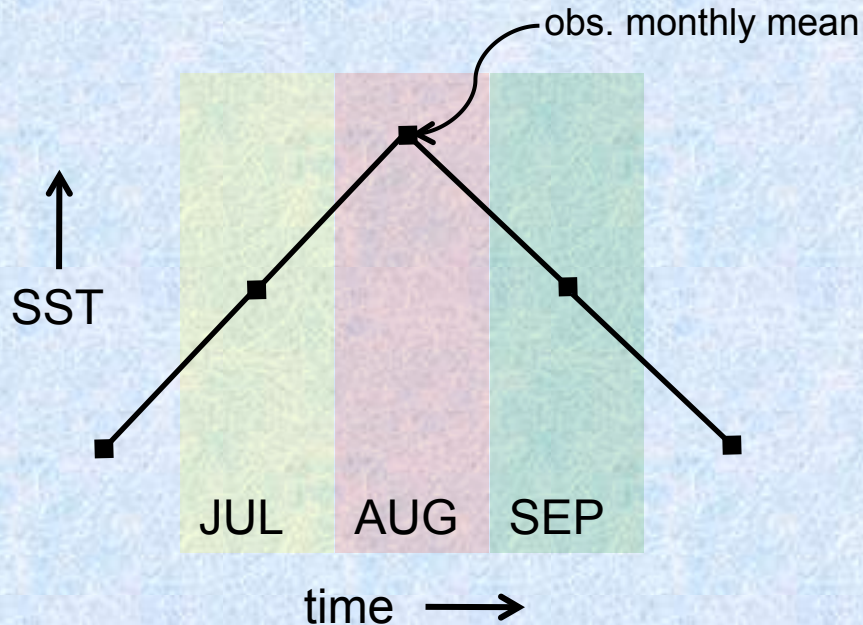
Dubrovnik, Croatia
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Observational basis for AMIP boundary conditions

- Original AMIP: monthly SST and sea ice fraction for 1979-1980.
- Currently extends from 1870 to near-present
- Available from PCMDI:
 - CMORized version of data processed by NCAR following Hurrell et al. (J. Clim., 2008)
 - Source: merged monthly mean data from HadISST2 and NOAA OI-v2.

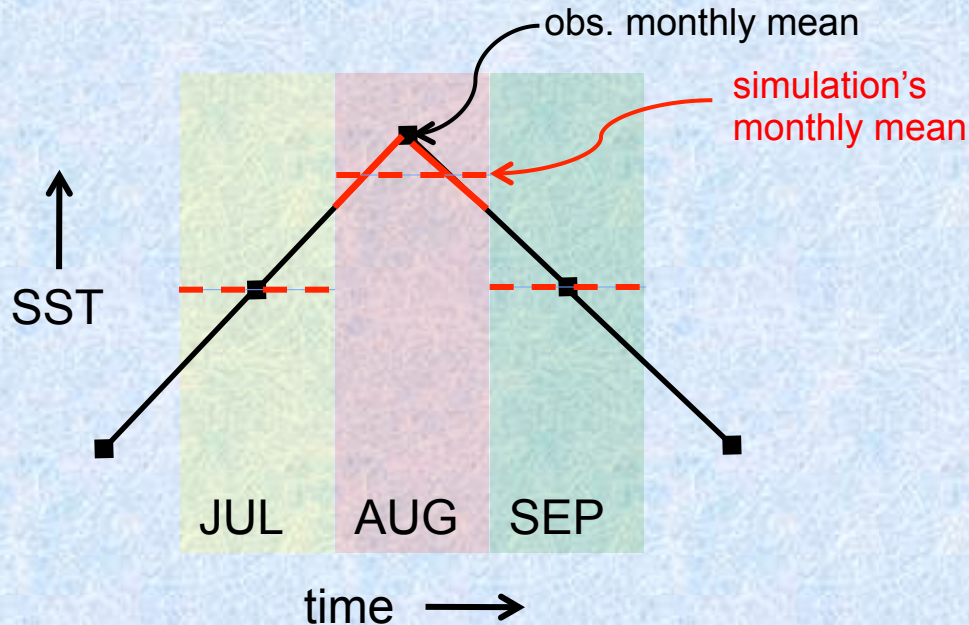
CMIP requirements for AMIP boundary conditions specifications

- SST's and sea ice prescribed should reproduce the observed monthly means.
- Simple interpolation from observed monthly means to daily values does not meet CMIP requirements:



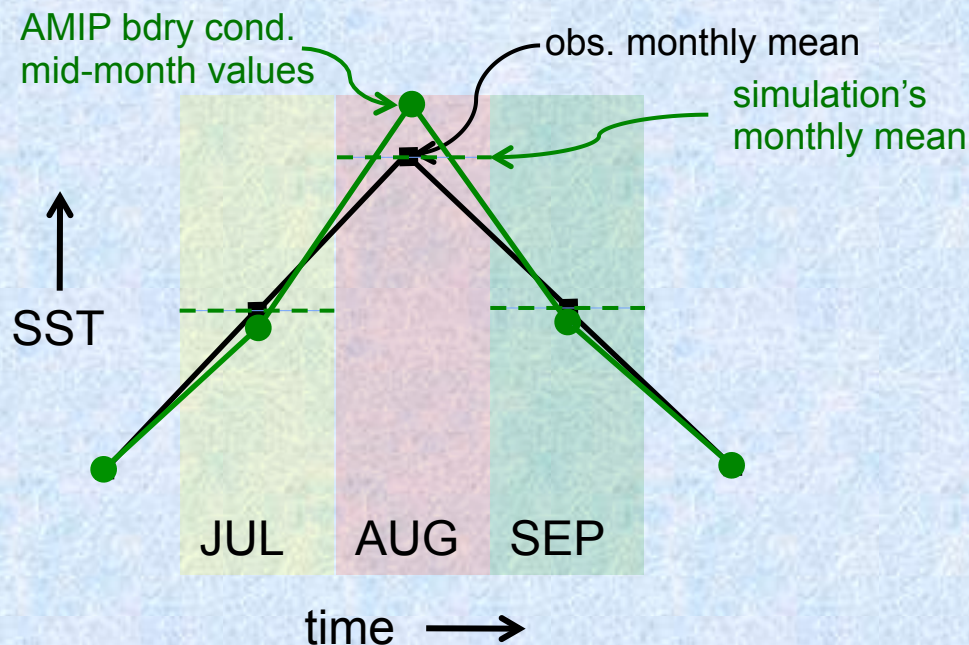
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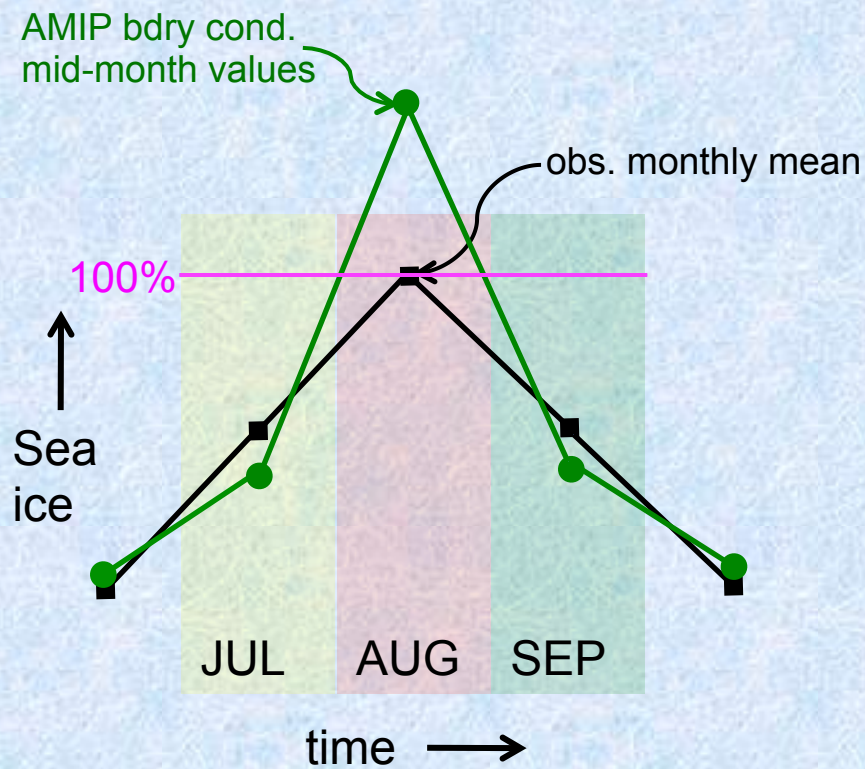


One solution to problem

- Generate mid-month values that when interpolated to daily values and time-averaged yield the correct monthly means.
 - Sheng and Zwiers (Clim. Dyn., 1998)
 - Taylor et al., (<http://www-pcmdi.llnl.gov/projects/amip/AMIP2EXPDSN/BCS/index.php>, 2000)

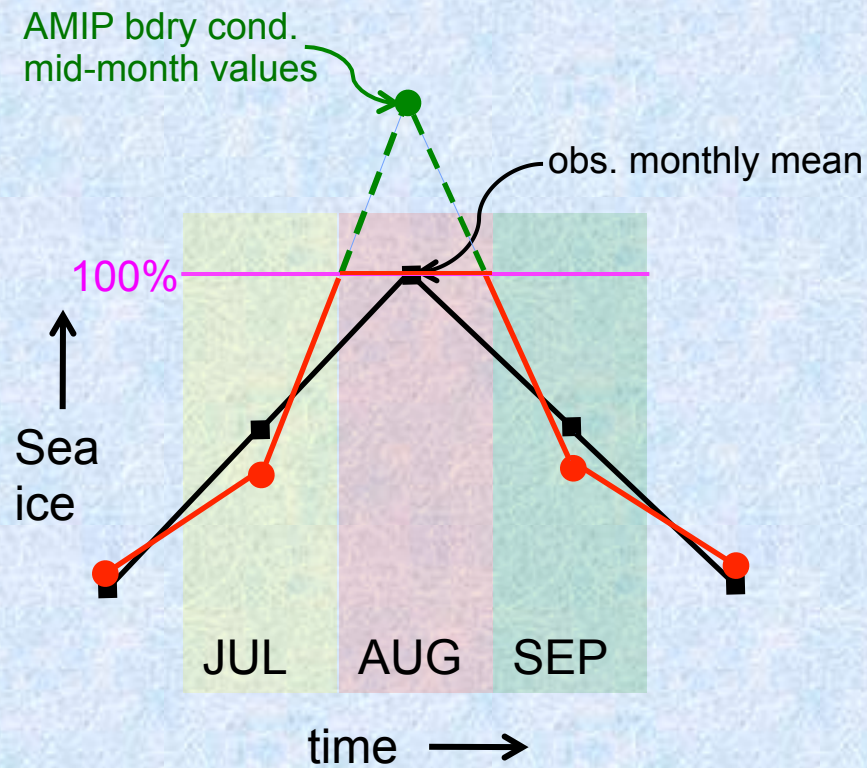


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Mid-month values have been defined such that after "clipping" interpolated values (to permitted range) observed monthly means are recovered



CMIP6

- Observed monthly mean SST's and sea ice (1870 - present)
 - On 1x1 deg grid
 - Updated every few months
- Consider
 - Updating to new versions of HadISST and NOAA OI
 - higher resolution?
 - different method of generating daily values

Links & contact

- Description of how to apply boundary conditions:

<http://www-pcmdi.llnl.gov/projects/amip/AMIP2EXPDSN/BCS/index.php>

- Download observed monthly means and/or boundary condition mid-month values:

http://www-pcmdi.llnl.gov/projects/amip/AMIP2EXPDSN/BCS/amipbc_dwnld.php

- Contact: Paul Durack (durack1@llnl.gov)

