

Solar forcing

Bernd Funke, Instituto de Astrofísica de Andalucía, CSIC, Granada, Spain

Contributors

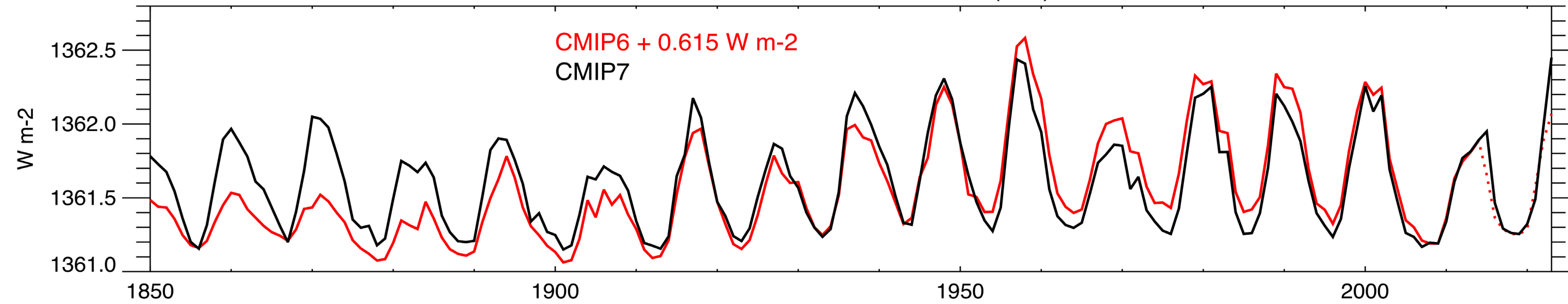
| Name | Affiliation | Country |
|--------------------------|-----------------------------|----------------------|
| Timo Asikainen | U Oulu | Finland |
| Stefan Bender | IAA-CSIC | Spain |
| Theodosios Chatzistergos | MPS-Goettingen | Germany |
| Odele Coddington | LASP-U Boulder | USA |
| Thierry Dudok de Wit | ISSI-Bern & LPC2E-U Orleans | Switzerland & France |
| Illaria Ermolli | INAF-OAR | Italy |
| Bernd Funke | IAA-CSIC | Spain |
| Margit Haberreiter | PMOD-Davos | Switzerland |
| Doug Kinnison | NCAR | USA |
| Natasha Krivova | MPS-Goettingen | Germany |
| Judith Lean | NRL | USA |
| Sergey Koldoboskiy | U Oulu | Finland |
| Daniel R. Marsh | U Leeds | UK |
| Hilde Nesse | U Bergen | Norway |
| Annika Seppälä | U Otago | New Zealand |
| Miriam Sinnhuber | KIT | Germany |
| Ilya Usoskin | U Oulu | Finland |
| Max van de Kamp | FMI | Finland |
| Pekka T. Verronen | U Oulu & FMI | Finland |
| Sebastian Wahl | GEOMAR | Germany |

Solar forcing: Status and timeline

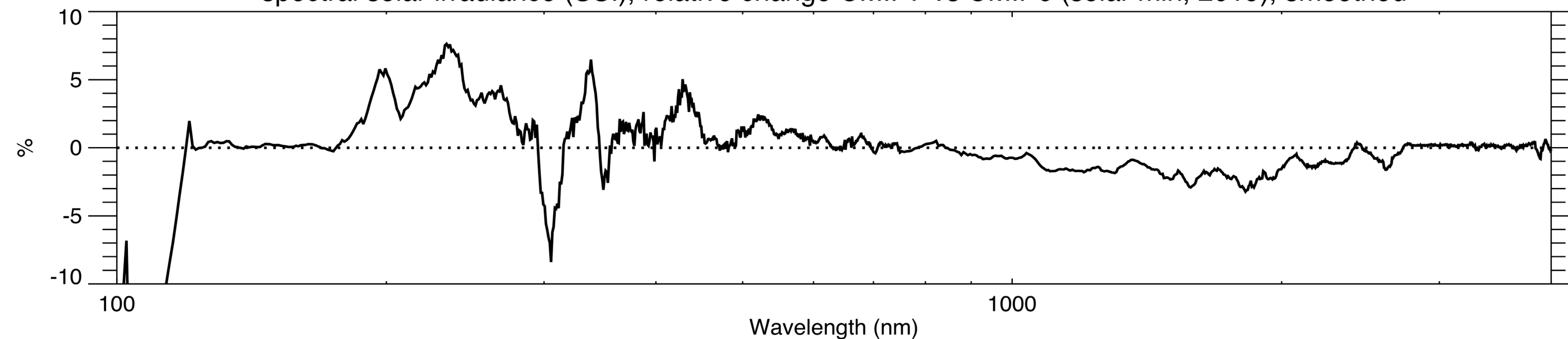
- First preliminary (CMIP6plus) historical dataset released in June, current version 4-4 (accessible on input4MIPs and solarisheppa.geomar.de)
- Status Version 4-4:
 - Radiative forcing (TSI, SSI) stable
 - Particle forcing: Ongoing refinements of MEE reconstruction (to be solved within next weeks)
 - Still missing: uncertainty estimates
- Final historical dataset (for CMIP7 DECK) to be delivered until Jan 2025
- Future solar forcing (to be finalized until end of 2025)

Solar radiative forcing: CMIP7 vs. CMIP6

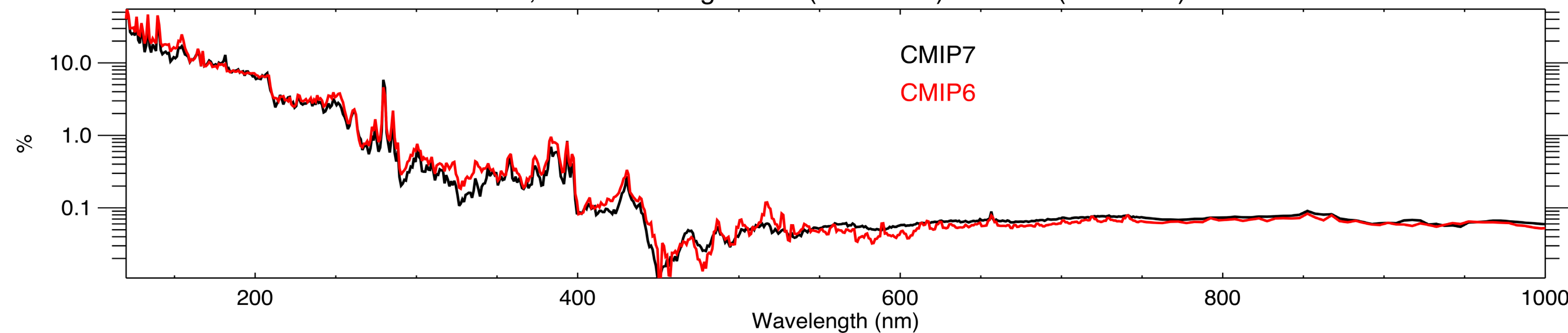
annual total solar irradiance (TSI)



spectral solar irradiance (SSI), relative change CMIP7 vs CMIP6 (solar min, 2019), smoothed



SSI, relative change 2000 (solar max) vs 2019 (solar min)



- TSI reference slightly larger: $+0.615 \text{ Wm}^{-2}$
- slightly smaller secular trend
- enhanced (reduced) irradiance in the UV (NIR)
- slightly smaller (larger) decadal variability in the UV (NIR)