ISIMIP

Inter-Sectoral Impact Model Intercomparison Project

Fire Sector

Stijn Hantson, Fang Li, Chantelle Burton, Matt Forrest

Model status: ISIMIP3a

- CLASSIC run and submitted
- CLM preparing
- JULES-INFERNO run, currently in QC for submission
- JULES-ConFire run, not yet submitted
- LPJ-GUESS-SIMFIRE-BLAZE run, not yet submitted
- LPJ-GUESS-SPITFIRE run, not yet submitted
- LPJml-SPITFIRE preparing
- ORCHIDEE-MICT-SPITFIRE run and submitted
- SSiB4-TRIFFID run and submitted
- (VISIT) run and submitted





Model status: ISIMIP3b

Mostly waiting for transient land use data to become available

- CLASSIC run & submitted (2015soc, SSP126, SSP370, SSP585, gfdl-esm4 ukesm1-0-ll)
- CLM waiting
- JULES-INFERNO run, currently in QC for submission
- JULES-ConFire waiting
- LPJ-GUESS-SIMFIRE-BLAZE waiting
- LPJ-GUESS-SPITFIRE waiting
- LPJml-SPITFIRE waiting
- ORCHIDEE-MICT-SPITFIRE waiting
- SSiB4-TRIFFID waiting
- (VISIT) run and submitted (2015soc, SSP126, SSP370, SSP585, gfdl-es ipsl-cm6a-lr/ mpi-esm1-2-hr/ mri-esm2-0/ ukesm1-0-ll/

Papers in prep

- Special Issue – “Is climate change driving an increase in global fires?” Chantelle Burton and Seppe Lampe et al.
- Special Issue – “Attributing human mortality from fire pollution to climate change” Chaeyeon Park et al.





Other paper plans / ideas:

- How will fire regimes change in the future
- What are the drivers of future change
- Future impacts on ecosystems / shrub/woody encroachment
- Future changes to fire seasonality
- Uncertainty in modes
- Sensitivity of models to driving data
- Future emissions & impacts on radiation and climate
- Fire impacts on society (AQ / health)
- Simulating extremes
- Fire suppression
- Afforestation scenarios
- Permafrost-fire interactions
- Impacts and biodiversity





Challenges for the Fire Sector





Modelling challenges:

- Capability to simulate extremes
- Sensitivity to driving data
- Lack of long-term observations
- Large uncertainty in observations
- -> Difficulty constraining the models for the past, and therefore future

Challenges for the sector:

- Availability of future transient LUC, which has limited advances for 3b

Opportunities:

- Analysis of the link / impact of fire with other sectors