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icclim/ocgis: a generic climate impacts indices calculation package interfaced with the tailored IS-ENES web portal climate4impact WPS

Monday, 19 May 2014 16:00 (15 minutes)

Within the FP7 European projects IS-ENES/IS-ENES2 on climate model data infrastructure, a web portal tailored for climate change impact communities is being developed. A first prototype version has been released in 2013. To support the impact communities, a package (icclim) to calculate climate indices (starting with the ECA&D indices) is currently developed. Several constraints had to be considered: full integration with the climate4impact WPS (pyWPS); fast performance for near-realtime on-the-fly calculations, notably with the integration of icclim within OpenClimateGIS (ocgis) which features OpenDAP time and spatial subsetting as well as data chunking, but also with the optimization of the code through an integrated python C shared-library. icclim also ensures that NetCDF output files are CF-compliant and preserves existing MetaData.

Wider impact and conclusions

With the integration of icclim within ocgis, a wider distribution and use of the package is envisioned, especially through NCAR/NCPP. icclim/climate4impact will also be used within the FP7-SPACE CLIPC European project with the addition of climate indicators calculations, and potentially also in some other France National projects.

URL(s) for further info

https://github.com/tatarinova/icclim
http://icclim.readthedocs.org/
https://earthsystemcog.org/projects/openclimategis/
http://climate4impact.eu/
https://verc.enes.org/ISENES2/
https://verc.enes.org
http://www.ceda.ac.uk/projects/clipc/

Description of work

Within the FP7 European projects IS-ENES/IS-ENES2 on European climate model data infrastructure, a web portal tailored for climate change impact communities is being developed, called climate4impact. A first prototype version has been released in 2013, and a second release is expected in April 2014. It features static and dynamic documentation, Use Cases and best practice examples, a search interface, an integrated authentication and authorization system with the Earth System Grid Federation (ESGF), a visualization interface (ADAGUC).
To support the impact communities, a generic package (icclim) to calculate climate indices (starting with the ECA&D indices) is currently being developed. Several constraints had to be considered: full memory integration with the climate4impact WPS (pyWPS); fast performance for near-realtime on-the-fly calculations, notably with the integration of icclim within NCAR/NCPP OpenClimateGIS (ocgis) which features OpenDAP time and spatial subsetting as well as data chunking, but also through the optimization of the code using an integrated python C shared-library. icclim also ensures that NetCDF output files are CF-compliant and preserves existing MetaData. It also provides MetaData information on the data processing.

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