

Cross-Work Package issues

Models, tools and HPC – Presentation of issues to be discussed

- Innovation for Models, Tools and HPC - Thursday 12h30-12h45
facilitator: Graham Riley
- Machine Learning and Artificial Intelligence - Thursday 12h45-13h00
facilitator: Graham Riley
- XIOS benchmarks and next developments - Friday 10h-11h30
facilitator: Sophie Valcke, Mario Acosta,
- Computational evaluation of ESMs, including coupling issues (LUCIA) and energy consumption; Friday 11h30-13h00
facilitator: Mario Acosta



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- *Innovation for Models, Tools and HPC - Thursday 12h30-12h45*
facilitator: Graham Riley
 - Clarify « Innovation » concept for EU projects
 - Identify innovation potential in WP4-NA3, WP6-VA1, WP8-JRA1



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 - Clarify « Innovation » concept for EU projects
 - Identify innovation potential in WP4-NA3, WP6-VA1, WP8-JRA1
- *Machine Learning and Artificial Intelligence - Thursday 12h45-13h00*
facilitator: Graham Riley
 - How to share and foster uses of ML/AI in ESM within IS-ENES3
 - Interaction/differences with ESiWACE2
 - Workshop on ML/AI in 2021



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- *XIOS benchmarks and next developments - Friday 10h-11h30*

facilitator: Sophie Valcke, Mario Acosta

- XIOS is used by few groups to manage model I/Os with on-line processing for CMIP6
- Will XIOS scale for higher resolution applications?
- Discussion on benchmark design to test XIOS scalability and coordination with current workflow optimisation



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facilitator: Sophie Valcke, Mario Acosta
 - XIOS is used by few groups to manage model I/Os with on-line processing for CMIP6
 - Will XIOS scale for higher resolution applications?
 - Discussion on benchmark design to test XIOS scalability and coordination with current workflow optimisation
- *Computational evaluation of ESMs, including coupling issues (LUCIA) and energy consumption; Friday 11h30-13h00*
facilitator: Mario Acosta
 - Computational Energy Evaluation of CMIP6 models (CPMIP)
 - Coupled models (automatic) load balancing with new LUCIA tool



Cross-Work Package issues

Models, Tools, HPC - Innovation

- Innovation – definition for EU projects
 - Has to lead to *changes* in one of four sectors
 - Business (i.e. commercial activity)
 - Public (e.g. Policy makers, Public Service providers)
 - Private (personal use)
 - Voluntary (non-government and non-profit)
- Changes in research communities *does not count!*



- We need to look for and make opportunities for take-up of IS-ENES3 work in these sectors
 - And report on the activities – see Martin’s metrics discussion/slides
- Innovation – Virtual WP in IS-ENES3 led by Martin Juckes
 - NA3T6: Innovating with s/w and HPC industry
 - has a coordinating/supporting role for NA3 & JRA1



- NA3T6 – for activities in NA3 and JRA1 (8pm across 6 partners)
 - 6 areas
 - NA3T3: Complex Coupled Systems
 - Data may influence hardware and software vendors
 - NA3T4: Machine Learning and Tech track
 - ESM needs/use may lead to changes in commercial providers
 - JRA1T2: New Sea ice model
 - May be used by (commercial/national public) service providers?



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Models, Tools, HPC - Innovation

- JRA1T3: Coupling
 - May be used by (commercial) service providers
 - Training to business people counts
- JRA1T4: XIOS
 - Commercial take-up?
- JRA1T5: Cylc/Rose
 - Already commercial interest (See Martin's slides)
 - May well be used by national public (weather) service providers



Cross-Work Package issues

Models, Tools, HPC - Innovation

IS-ENES3 1st General Assembly
25-27th March 2020
Toulouse, France

- Questions/comments?



- NA3T4: Machine Learning and Tech Tracking (12pm, 4 partners)
 - Role to share and foster new/better uses of ML/AI in ESM within IS-ENES3 (and hence the wider ESM community)
 - Across models and data analytics
- Relation to ESiWACE2?
 - IS-ENES3 – focus mainly on developments *outside* our ESM partners
 - E.g. Software and hardware companies who are not currently engaged in ESM
 - Other academic communities (e.g. Physics, biology)
 - What might they offer? Links to Innovation...
 - ESiWACE2 – focus on sharing experiences and practices *within* our ESM partners



- NA3 M4.2: New Technical Opportunities Workshop in ML/AI
 - Funding now made available!
 - A joint workshop with ESiWACE2 under discussion
 - Perhaps a follow-on to the Palmer/Deuben Oxford Workshop (Sept. 2019)?
 - Probably in March 2021
 - Organising committee to be set up shortly
 - Volunteers? Suggestions?
 - Suggestions for speakers?
- Aim to bring people from industry/academia outside ESM to inform future directions



Cross-Work Package issues

Models, Tools, HPC – ML/AI

- There is quite a bit of current ML/AI-related activity in ESM
 - (has been for many years)
- This is being reviewed across IS-ENES3 and ESiWACE2
 - Aim to share current knowledge, experiences, best practices
 - IS-ENES3 effort mainly on new and emerging opportunities
- Questions/Comments?

