



ARTificial Intelligence for Ecosystem Services

ESP10 World Conference
Pre-Conference Session
Hannover, 20th October 2019

Date: 20 October 2019

Time: 15:30 – 18:30

Language: English

Venue: Leibniz Universität Hannover (LUH) – Institute of Physical Geography and Landscape Ecology, Schneiderberg Str. 50 30167 Hannover. (Note: this is a 5-minute walk from the main building)

Room: 309

Organized by: Basque Centre for Climate Change (BC3) and Integrated Modelling Partnership

Hosts: Ferdinando Villa (BC3), Stefano Balbi (BC3), Marta Pascual (BC3), Enrico Girotto (BC3), Alba Marquez Torres (BC3), Zuzana Harmáčková (CzechGlobe-Global Change Research Institute of the Czech Academy of Sciences), Kii Hayashi (Nagoya University).

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URL: <https://www.espconference.org/esp10/wiki/436109/training#ARIES>

Intro

“With the rapid advancement in modelling of potential and current ecosystem service stocks and flows, there is a growing need for more integrated modelling approaches that address the consequences of multiple changes in drivers, pressures and biodiversity on multiple ecosystem services in space and time. Furthermore, decision makers are becoming ever more interested in integrating ecosystem services in policy and practice” (text taken from SESSION PROGRAM (T5) Abstract).

In this context, we present an internet browser-based, even easier-to-use interface, called k.Explorer: the easiest way to access ARIES models. When seeking rapid ES modeling results, this makes time-consuming data preparation a thing of the past; users simply select a spatiotemporal context then drag and drop the model concepts they're interested in modeling in the ARIES software interface. Users can then explore and export model outputs



and provenance (information about the data and models used for each model run). However, users can also customize input data, model parameterization, and model structure for their location of interest, improving models' spatiotemporal, local applicability, and/or filling information gaps. If desired, data and model customization can be shared with other users on the ARIES network, improving the availability of ecosystem services data and models for future assessments.

ARIES training

The training session ARIES (Artificial Intelligence for Ecosystem Services) will illustrate how the ARIES modelling framework implements integration and interoperability approaches through semantic web modelling and how this approach can overcome some of the common challenges of data and model integration, providing a broad range of collaborative models from simple to complex, while efficiently reusing scientific and stakeholder knowledge and sharing it with the larger ecosystem services community. A live demo will show how its web interface k.Explorer works.

The session will be facilitated by experts from the ARIES team in an interactive format. No laptops will be required for this training. However, should the participants like to install k.Explorer and use it, they will be able to do so!

After attending this 3h training workshop participants would have acquired the necessary skills to access the ARIES network of models and data models with k.Explorer and test them on their context of analysis.

The currently available content of the network includes:

- ✓ More than 100 spatial data layers (at scales from regional to global) from their authoritative sources.
- ✓ The entire feature data from OpenStreetMap (through a specialized mirror that is updated constantly) so that they can be used in our computations.
- ✓ A suite of model components to address to ecosystem services related queries in 10 areas of study (recreation, pollination, flood regulation, sediment regulation, carbon storage, etc.), and their combination with spatial multi-criteria assessment for trade-off and spatial planning analysis.
- ✓ A full set of GIS algorithms to use within modeling workflows to implement complex spatial models.

Goals

1. Introduce ARIES so that participants become familiar with the modelling framework.
2. Introduce k.Explorer so that participants can further explore and use the models by themselves after the training workshop.
3. Create a space for knowledge exchange on ecosystem service modelling.
4. Provide a venue for future collaborations on ecosystem services modelling.



Software installation and reading material

Software installation details as well as some suggested reading material will be sent to those registered prior to the session (17th of October 2019).

Note: *If participants have not installed the software before the workshop, and desire to do so, we'll provide support for a rapid installation on the spot (this might depend on internet).*

Attendance

The session is open to all conference participants who have already registered for it. Due to space limit we currently cannot accept any more participants. However, should you like to be included in waiting list, please let us know by sending an email to the attention of Marta Pascual (marta.pascual@bc3research.org).

Program

- 15.00 - 15.30 Registry: Gather in LUH room 309 so as for registry
- 15:30 – 15:40 Getting started: Agenda and Training Overview
- 15.40 - 16.10 Intro: The ARIES modelling approach
- 16.10 – 17.00 k.Explorer live demo
- 17.00 – 17.30 Coffe Break (included in the session)
- 17.30 – 18.00 k.Explorer in practice: hands-on training session
- 18.00 - 18.30 Recap, feedback, discussion and opportunities for collaboration

