



ACCIÓN DE INTERNACIONALIZACIÓN EN DOCTORADO: P.D. EN INGENIERÍA DEL AGUA Y MEDIOAMBIENTAL (PROF.ILIAS PECHLIVANIDIS)

Al terminar la actividad el asistente podrá (descripción de objetivos de la actividad):

- 1) Transmisión de conocimiento frontera en el ámbito de investigación del Programa
- 2) Promoción de estancias de investigación de doctorandos del programa en Centros de investigación extranjeros de prestigio.
- 3) Promoción de co-direcciones de tesis con investigadores extranjeros de prestigio.
- 4) Promoción de la colaboración en proyectos de investigación con investigadores extranjeros de prestigio.

Conocimientos previos necesarios:

Estudiantes de la Universitat Politècnica de València
PDI de la Universitat Politècnica de València

Acción formativa dirigida a:

Estudiantes de la Universitat Politècnica de València
PDI de la Universitat Politècnica de València

ACTIVITY 1. Seminar title: Challenges in understanding and prediction of hydrological responses: From data availability to water services (4.5 hours of lectures)

Goal: Present both the various challenges related to large-scale hydrological modelling, and the added value to

Expected attendants: PhD students and some faculty members (20-30)

Summary

Weather variations can have a significant impact on a number of sectors (i.e. water, energy, health, tourism etc.) and therefore managing such variations through better understanding and improved predictions is crucial. Over the last years, hydrological models showed their potential to simulate the responses from river systems at large domains (national, continental and global). The model development in combination with improvements in meteorological forecasting skill has allowed the further development of operational large-scale hydrological services in order to address various user needs. Although efforts were put to bridge the knowledge gap between data/service providers and users, there is still a need for strong user engagement through better communication of results and co-evolution of knowledge. International and national organisations have been operationally providing key hydro-meteorological and climatic indicators to address the water-related user needs at different spatiotemporal scales. This has been done in various time horizons, from past historical periods to future conditions. Driven by experience to address needs at the large-scale, these series of presentations will highlight the occasional limitations of continental and global services at different scales (forcing data, process representation, parameter calibration), particularly when the impact of human intervention is unknown during the service setup. Examples at the regional scale will also be used to show how challenges can be partially tackled and how services can evolve through co-generation together with users. More importantly, the presentation will also highlight the

opportunities that can lead to service evolution both from the data providers' and the users' perspective. The course format will include lectures, and discussion, and playing a serious game.

Session 1 Understanding and modelling the hydrological processes at the large scale

Session 1.1: Calibration strategies for large scale modeling. Date: November 24th, 9:00 am – 10:00 am. Location:

Online meeting

- The HYPE hydrological model
- Model diagnostics
- Knowledge accumulation during model setup
- Performance metrics, Modelling constrains, Comparative hydrology, Expert knowledge

Session 1.2: Examples from key hydrological challenges at the large scale. Date: November 24th, 10:00 am – 10:30 am. Location: Online meeting

- Sources of errors
- Model parameterization
- Regionalisation methodology

Session 1.3: Examples from SMHI's large scale setups. Date: November 24th, 10:30 am – 11:00 am. Location: Online meeting

- The Swedish model
- The European model
- The Global model

Session 2 Large-scale hydrological services

Session 2.1: Early warning services (EWS) for the water sector. Date: November 24th, 13:00 pm – 13:30 pm. Location:

Online meeting

- State of the art EWS
- Dissemination of warnings
- Moving beyond the state of the art

Session 2.2: Challenges and opportunities for the co-evolution of knowledge. Date: November 24th, 13:30 pm – 14:00 pm. Location: Online meeting

- Data and information flow in decision-making
- Limitations of services
- Service evolution practices

Session 3: Playing a serious game on forecast-based decision-making. Date: November 24th, 14:00 pm – 15:30 pm.

Location: Online meeting

- Communication of forecasts
- Uncertainty and reliability in probabilistic forecasting
- Serious games to train users
- Decision-making

ACTIVITY 2.

Meeting with PhD students and advisors on co-advising of PhD theses. November 25th, 14 pm – 17 pm. Venue: Online meeting

ACTIVITY 3.

Temas a desarrollar:**ACTIVITY 3.**

Meeting with advisors on joint research possibilities. November 26th, 10 am – 13 am. Venue: Online meeting

Short CV

Dr Ilias Pechlivanidis is the Scientific Leader in Forecasting of Water Variables at SMHI and the Project Manager of the European Flood Awareness System (EFAS) Dissemination Centre, which operates under the Copernicus Emergency Management Service. He is also an expert in identification and evaluation of hydrologic models under uncertainty and has more than 15 years of experience in hydrologic/hydraulic research. He has acted as Associate/Guest Editor in journals (Global NEST, Hydrology and Earth System Sciences (HESS), Water), and has organized and convened international workshops and conferences (>15). He has been the principal investigator in European and international projects, focusing on short to medium range, (sub-) seasonal and decadal hydrological forecasting, calibration of large-scale multi-basin hydrological models, and assessment of environmental change on hydrology and water resources. He has been coordinating SMHI's operational sub-seasonal and seasonal forecasting service over Europe and the globe and coordinating SMHI's effort on setting up a European seasonal hydrological forecasting service for the Copernicus Climate Change Service. Finally, he is the Co-Chair of the Hydrologic Ensemble Prediction Experiment (HEPEX) scientific initiative, the Chair of the EGU HS (European Geosciences Union – Hydrological Sciences) Hydrological Forecasting sub-division, and a Reference Member at the Centre of Natural Hazards and Disaster Science (CNDS).

Metodología didáctica:

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Otra Información de interés:

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Condiciones generales

La acción formativa cumple las siguientes condiciones generales: http://www.cfp.upv.es/cond_gen?2

Organizadores:

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|--------------------------|---------------------------------|
| Responsable de actividad | DIRECTOR/A ESCUELA DE DOCTORADO |
| Coordinador | MANUEL AUGUSTO PULIDO VELÁZQUEZ |

Datos básicos:

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|-------------------|-------------------------|
| Tipo de curso | JORNADAS |
| Estado | TERMINADO |
| Duración en horas | 10,5 horas presenciales |

Dónde y Cuándo:

| | |
|--------------------------|--|
| Dónde | VALÈNCIA |
| Horario | INTERNET |
| Observaciones al horario | Martes 24 de Noviembre de 09:00 a 11:00 (varias sesiones) y de 13:00 a 15:30 Miércoles 25 de Noviembre de 14:00 a 17:00 Jueves 26 de Noviembre de 10:00 a 13:00 |
| Lugar de impartición | Online Se comunicará oportunamente la herramienta y la dirección de conexión |
| Fecha Inicio | 24/11/20 |
| Fecha Fin | 26/11/20 |

Datos de matriculación:

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|--------------------------|-----------------------------|
| Matrícula desde | 3/11/20 |
| Inicio de preinscripción | 8/10/20 |
| Mínimo de alumnos | 5 |
| Máximo de alumnos | 40 |
| Precio | 0,00 € - Público en general |
| Profesorado: | |
| PECHLIVANIDIS, ILIAS | |