IAHR Universidad Nacional De Ingeniería - Geahh Young Professionals Network
2020 Annual Report of Activities
IAHR Universidad Nacional De Ingeniería -GEAHH - Young Professionals Network

2020 Annual Report of Activities

1. Introduction

Due to the current situation it was not possible to carry out the activities of all the areas in a similar way to the previous periods due to this, the activities of the logistics area were derived to support the other areas, the other areas continued with their normal activities, but adjusting to the type of remote activities, avoiding always the congregation or expose our members or aspiring members to any risk of the current situation. Considering this structure, an attempt was made to stimulate the participation of each area, giving greater freedom and decision-making capacity to the respective heads, so that the group could work more efficiently.

2. 2020 main goal and key objectives

Our YPN aims to promote, disseminate and develop activities that contribute to the engineering training (including academic plans, research and leadership) to students of the Faculty of Civil Engineering of the National University of Engineering,, contemplating a projection towards other universities and institutions, in the areas of hydraulics and hydrology, and also to share knowledge and experiences in the field of engineering and research related to water.

3. Communications

[Website and social networks]

<table>
<thead>
<tr>
<th>Website</th>
<th>Facebook</th>
<th><a href="https://www.facebook.com/geahh.uni">https://www.facebook.com/geahh.uni</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Facebook</td>
<td>Twitter</td>
<td>Instagram</td>
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<tr>
<td>Instagram</td>
<td>Linkedin</td>
<td><a href="http://www.linkedin.com/in/iahr-uni-geahh">www.linkedin.com/in/iahr-uni-geahh</a></td>
</tr>
<tr>
<td>Linkedin</td>
<td>Other</td>
<td></td>
</tr>
</tbody>
</table>

[Promotional and information materials]

| Newsletter/s |                                  |
4. Activities

Activity 1

Introduction to hydrology series analysis using R

Dates
January 31st, 2020

Objectives:
Teach the applications of the R language of time series in Hydrology to the members of the group

Description
Before the beginning of the workshop it was indicated to install Rstudio and download the libraries that would be used in the session.

It started with some basic operations in Rstudio. Some parameters in hydrology were explained.

He made applications in hydrology using RStudio.

Activity 2

An introduction to offshore wind farms and subsea cable burial
## Activity 3

**Date**: May 2nd, 2020

**Objectives**

*To present an overview of physical modeling in hydraulics and integrated water resources management.*

**Description**

This activity consisted in different seminars in Google Meet:

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**Dates**

February 28th, 2020

**Objectives**

*Introduce the main concepts for the design, operation, and maintenance for offshore wind farms*

**Description**

This seminar focused on the topic of offshore wind farms, its design criteria, advantages, disadvantages, operation and maintenance of offshore wind farms.

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**Dates**

May 2nd, 2020

**Objectives**

*To present an overview of physical modeling in hydraulics and integrated water resources management.*

**Description**

This activity consisted in different seminars in Google Meet:
### Activity 4

**Theory and applications of physical modelling in hydraulics.**

Integrated water resources management with the SIMGES model and application in the Mijares basin, Spain.

- **Dates**
  - May 16th, 2020

- **Objectives**
  - **B**
  - *Delivering a comparison on the usage of physical models made in the UNAM*

- **Description**
  - Explain the process to make physical models in comparison to prototypes and its importance

### Activity 5

**An introduction to R and climate change**

- **Dates**
  - June 27th, 2020

- **Objectives**
  - *Deliver different R applications such as in hydrology and climate change*
Description
The basic concept on the program were presented, explaining with application in hydrology, an example with Covid data, and climate change.

Activity 6

**Dams and connectivity in Amazon rivers**

**Dates**
July 1st, 2020

**Objectives**
*Share points of view on the impact of infrastructure in Amazon rivers*

**Description**
Conversation among: Dr. Victor Miguel Ponce, Dra. Ada Liz Arancibia, Dr. Cayo Leonidas Ramos Taipe, Dr. Patrick Venail, focused on the impact of dams, hydroelectric power stations in the Amazon.
### Activity 7

**Dancing rivers and its importance in the understanding of impacts of infrastructure in the amazon**

**Dates**
August 10th, 2020

**Objectives**
- Show the results of the research carried out by Dr Abad on the dynamics of amazon rivers
- Also the projects in development in the area such as the Amazon hydroway

**Description**
The main features of the amazon rivers were explained, focusing on sediments transport and the fluvial dynamics.

It was also explained the development of projects in the amazon such as the Amazon hydroway and hydroelectric power houses.

### Activity 8

**Determination of width and depth of meandering rivers:**

**How will they change with climate change and installation of infrastructure**
### Activity 8

**Dates**

August 10th, 2020

**Objectives**

Show the variations over time in width and depth on Huallaga river and Marañon River

**Description**

Show the studies focused in the analysis of behaviour of rivers’ width and depth through its variation in time due to the process of sedimentation and erosion in rivers

### Activity 9

**Flood control in the peruvian amazon**

**Dates**

November 10th, 2020

**Objectives**

Show the problems generated by the rivers of the jungle also show alternative solutions to these.
He focused on showing the way in which rivers develop in the Peruvian Amazon, then he sought to explain how they are designed and in what way the riparian defenses act in the fluvial morphology of the river.

Activity 10

**Water balance: using catchment wetting**

**Dates**

November 11th, 2020

**Objectives**

*Describe Water balance using catchment wetting*

*How much water can be pumped from an aquifer maintaining sustainability*
### Activity 11

<table>
<thead>
<tr>
<th>Hydrologic model Tetis capacity in management of water resources</th>
</tr>
</thead>
</table>
| **Dates**
August 10th, 2020 |
| **Objectives**
*Deliver the usefulness of software TETIS as an application in water resources* |
| **Description**
In the session they talked about the Hydrological modeling TETIS can provide us and the advantages that it presents. |

### Activity 12

<table>
<thead>
<tr>
<th>Marañon river and Huallaga river in the Andes</th>
</tr>
</thead>
</table>
| **Dates**
August 10th, 2020 |
| **Objectives**
Show the studies that are currently taking place in the Huallaga river and Marañon river |
Description
The process of the studies in Marañon river and Huallaga river were explained, also the evaluation of river behaviour towards the action of sediments, focusing on measurements taken in the area of study.

Activities to promote membership:

Activity 1

Searching for new members GEAHH

Dates
November 14th, 2020

Objectives:
To present our YPN to our fellow university students and this branch of Civil Engineering

Description
First we got together in a meeting in Google Meet

Second we presented our active members and how we are organized

Third, we talked about the activities we were planning to do with them.

Then some former GEAHH members exposed their current jobs and how our YPN helped them in their career development.

Finally, we took a screenshot with all the participants

5. Partnerships and collaborations

Partner organisations and/or interaction with related national organisations

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Description of partnership</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geahh-Fica-Unheval</td>
<td>Conferences organization</td>
</tr>
<tr>
<td>GIEHH UPN</td>
<td>Conferences organization</td>
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<td>CEIC UNI</td>
<td>Conferences organization</td>
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</table>

Collaboration with other YPNs

<table>
<thead>
<tr>
<th>YPN name</th>
<th>Description of collaboration</th>
</tr>
</thead>
<tbody>
<tr>
<td>IAHR UTEC Water and Environmental Research Young Professionals Network</td>
<td>Conferences organization</td>
</tr>
<tr>
<td>IAHR Pontificia Universidad Católica del Perú Young Professionals Network</td>
<td>Conferences organization</td>
</tr>
</tbody>
</table>
## 6. Contributing to the strategic plan

### 7.1. Please describe how your activities in 2020 have contributed to and advocated for IAHR’s vision and strategic plan (https://www.iahr.org/index/detail/101)

We have held a series of conferences to spread knowledge on various topics.

Some workshops were carried out for the dissemination of knowledge by members of the.

There were indications of investigation within the group and work is continuing.

### 7.2. Please describe how your YPN contributes to the IAHR YPN high-level aims

Throughout the previous period we have carried out activities with the members of our association to promote a scientific attitude and research skills.

Specifically, we have carried out a reading of scientific articles that include topics related to hydraulic engineering, hydrology, irrigation, drainage and water resources management.

In addition, we have conducted research on specific topics including airport drainage, spatial distribution of rainfall, pluvial drainage systems, water turbines, stream protection and sediment transport. This activity consisted in forming working groups, assigning a topic proposed by a graduate, the graduate will advise the working groups and finally after several weeks the assigned topic will be presented to the group to share the new knowledge they obtained on the topic.