

WORKING GROUP FOR THE ORGANISED DEVELOPMENT OF THE UNIVERSE  
AROUND THE MOHID WATER MODELLING SYSTEM

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# SUMMARY

- Why?
- How?
- **MOHID as code**
  - MOHID code
  - MOHID Software/Tools
  - MOHID compilation procedures
- **MOHID as community**
  - Webpage
  - Forúm
  - Wiki
  - GIT
  - MOHIDING
- **MOHID outreach**
  - Courses
  - Conferences
  - Documentation
  - Teaching

# WHY?



- The MOHID universe was in danger so it was needed to coordinate the initiatives for a new era. Some needs were identified such as:
  - Share knowledge and objectives;
  - Learn more about MOHID from others groups experience;
  - Know what other users/developers are currently doing;
  - Maintenance and improvement of the code and tools management;
  - Ease the MOHID user experience and improve communication;
  - Increase the number of users and outreach.

HOW?

**We need your collaboration!!!**



- In 2016 a small working group was set up for an initial p
- Set up as other international working groups
- Organigram:
  - Ramiro Neves – Secretariat
  - Francisco Campuzano – Chair
  - Sofia Saraiva – Co-chair (since 2018)
  - João Sobrinho – Co-chair (since 2019)
  - Frank Braunschweig – Representative Action Modulers (now Bentley systems)
  - Paulo Leitão – Representative Hidromod
- To be updated during this MOHIDing!

# MISSION

- Take care of MOHID Webpages and contents;
- Try to engage with new members;
- Generate an organ to make decisions;
- Organise yearly meetings of the steering group;
- Organise users national and international meetings;
- Maintain a comprehensive list of users;
- Decisions protocol and clear rules;
- Internal projects and formation;
- Avoid single interested decisions;
- Generate internal research projects and promote strategic developments that cannot be done during projects;
- Promote MOHID image and communication with end users;
- Coordinate code and executables provision;

# MOHID CODE

- Repository at <https://github.com/Mohid-Water-Modelling-System/Mohid/releases>
- Documentation:
  - GIT Manual: tools & procedures
- Code and repository cleaning (tools)
- Designing new functionalities
  - New Lagrangian model
  - Module turbine
  - MOHID as Earth System Model
  - Ocean acidification (planned!)
- Compiling:
  - C-make or command line
  - Linux make update and support
  - Agree on iFortran version and Microsoft visual studio for next two years
  - Clean all the configurations that do not work
  - Test with other fortran compilers?

# BETTER WORKFLOW WHILE MINIMIZING WORK

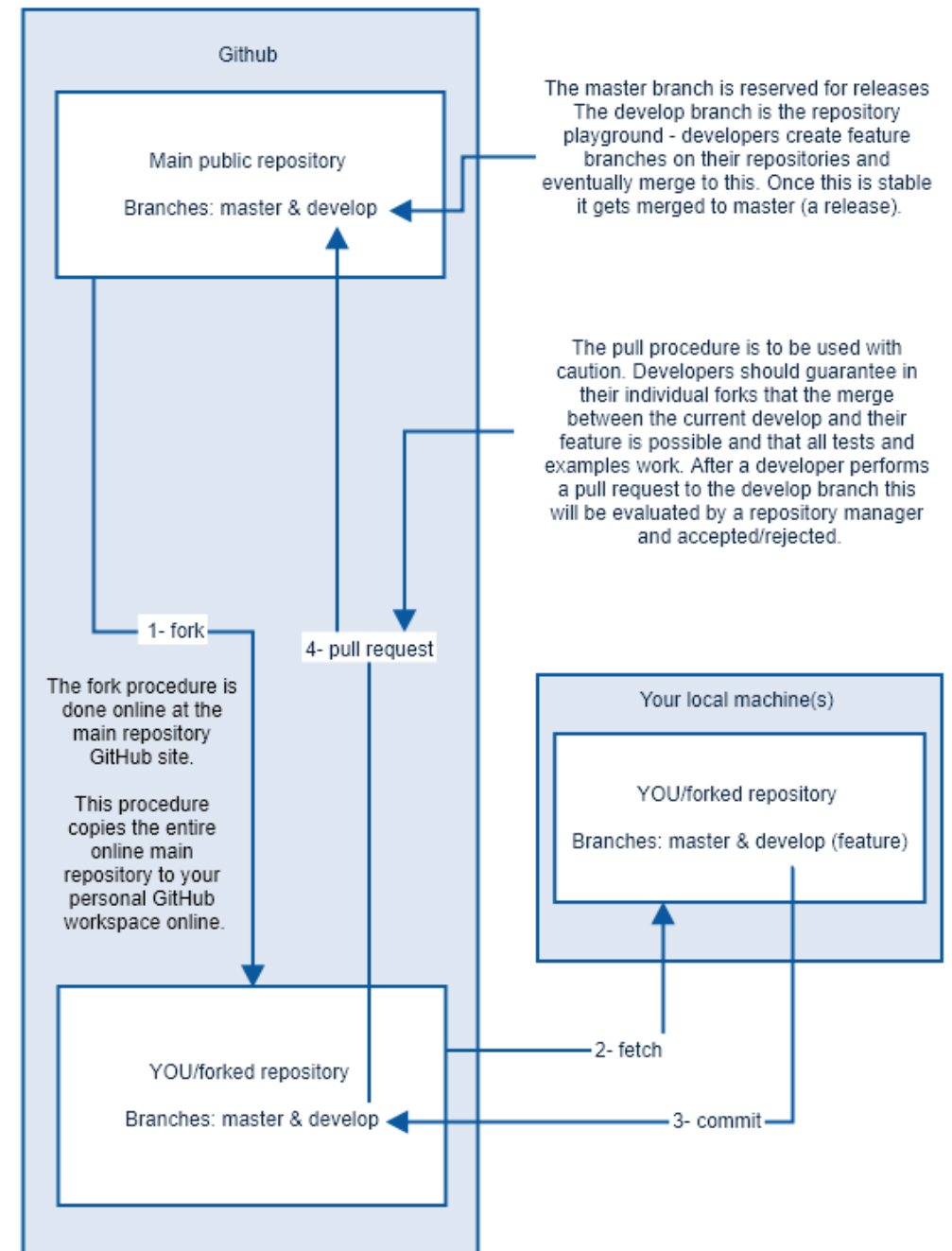
The MOHID ecosystem is large, complex, not easy to sustain and to get into. Many organizations have similar source characteristics, so tools to alleviate everyone's life are abundant, and they focus on some pillars:

- Repository & Version control
- Automatic solutions generation
- Automatic documentation
- Continuous integration

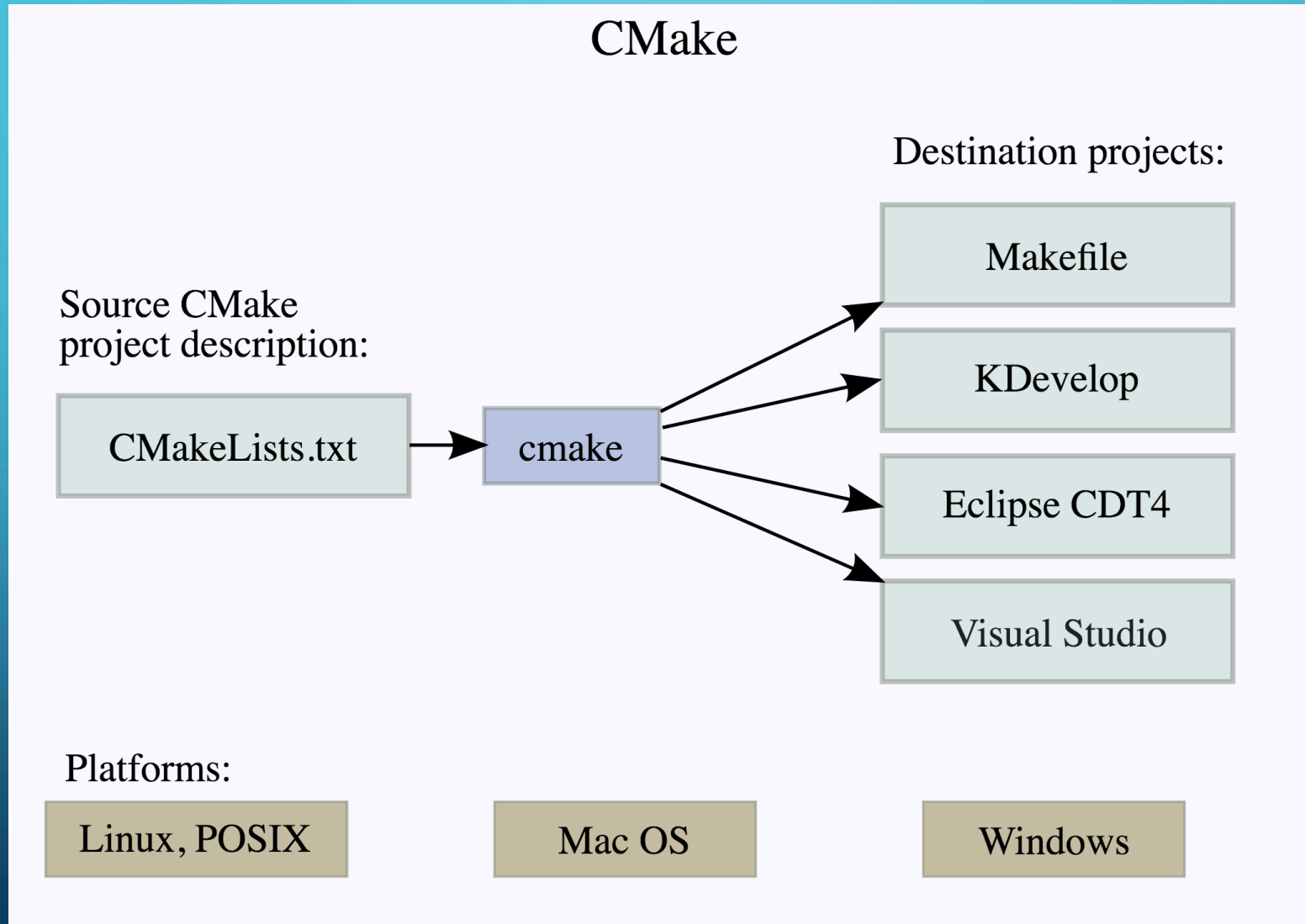
# REPOSITORY MANAGEMENT

Adopt a set of rules , broadcast them and use them for every interaction with the repository.

Since we don't use the GitHub Wiki, we can use that to describe the rules.



# BUILD SOLUTIONS



# AUTOMATIC CODE DOCUMENTATION

Use Doxygen to generate the documentation

- Slowly refactor the existing comments
- Create special sections for keywords, for example

This would automatically generate HTML and PDF documentation of our implementation

# CONTINUOUS INTEGRATION TOOLS

Set up Travis CI, that links to GitHub, to build and test every commit automatically.

This presents several advantages/challenges

- Uses Unix, forces us to make sure we can compile across systems
- Can use other than ifort, making sure we can compile with more strict compilers without actually having to manually test them
- Will force us to develop a good lightweight test suite

# MOHID EXECUTABLES

- Annual version released in June: **v17.06** released in the GITHUB MOHID code repository
- The release contains binaries and DLLs for the MOHIDWater and MOHIDLand code as found in the GitHub repository on the 19<sup>th</sup> of June 2017. The release contains the source code used for compiling and the binaries with the following flavours:
  - 32 bits (x86): MOHID Water;
  - 64 bits double precision (x64): MOHID Water and MOHID Land;
  - 64 bits double precision OpenMP (x64\_OpenMP): MOHID Water and MOHID Land;
  - 64 bits double precision MPI (x64\_MPI): MOHID Water.
- **LINUX** makefile will be tested every year to evaluate that is consistent with the code.
- Future releases will include the solved bugs, new features and known issues that are planned to be solved in the near future.
- In 2018:
  - **v18.06** will be released around the same dates

# MOHID AS COMMUNITY: WEBPAGE

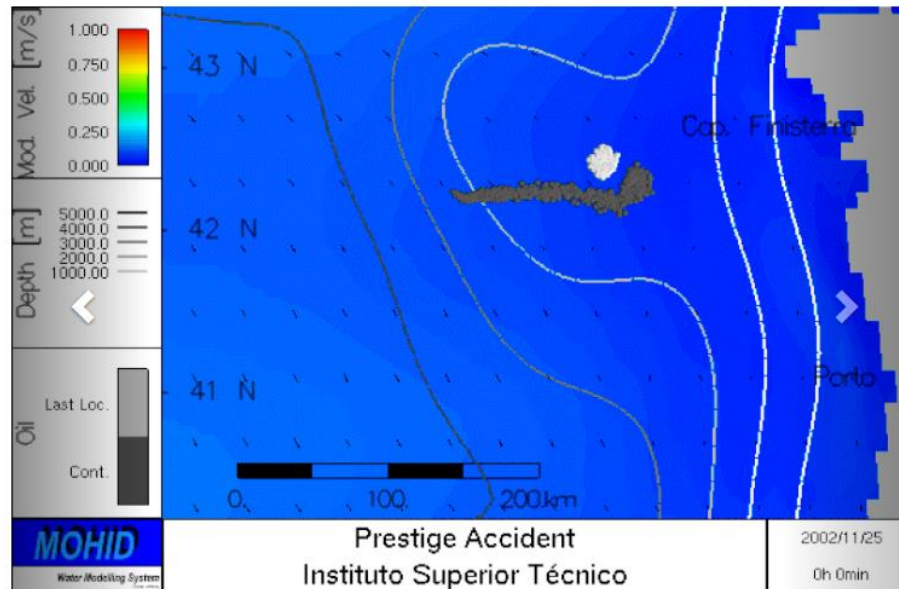
**MOHID**

Water Modelling System

Home ▾ Models ▾ Software ▾ Tools ▾ Learning ▾

## Since March 2017

MOHID - Water Modelling System



MARETEC 2017 | Partners:



# MOHID COMMUNITY





## Institutions



## Mohid Water



## Mohid Land

Cartagena Bay (Colombia)

name

Cartagena Bay (Colombia)


description


Application or study title: Hydrodynamic characterization of the Cartagena Bay (Colombia)

Application creators: Rueda JG, Otero LJ, Pierini JO

Related publications: Rueda JG, Otero LJ, Pierini JO. Hydrodynamic characterization in a tropical estuary of South America with mixed microtidal regime (Cartagena Bay, Colombia). Boletín Científico CIOH. 2013; 31: 159-174. Available at: [http://www.cioh.org.co/dev/publicaciones/acceso\\_dev.php?nbol=cioh\\_bcc3110.pdf](http://www.cioh.org.co/dev/publicaciones/acceso_dev.php?nbol=cioh_bcc3110.pdf) (In Spanish).

Contact person email address: [ruedabayona@gmail.com](mailto:ruedabayona@gmail.com)



Instituto de Estudios Hidrául...

name

Instituto de Estudios Hidráulicos y Ambientales - IDEHA

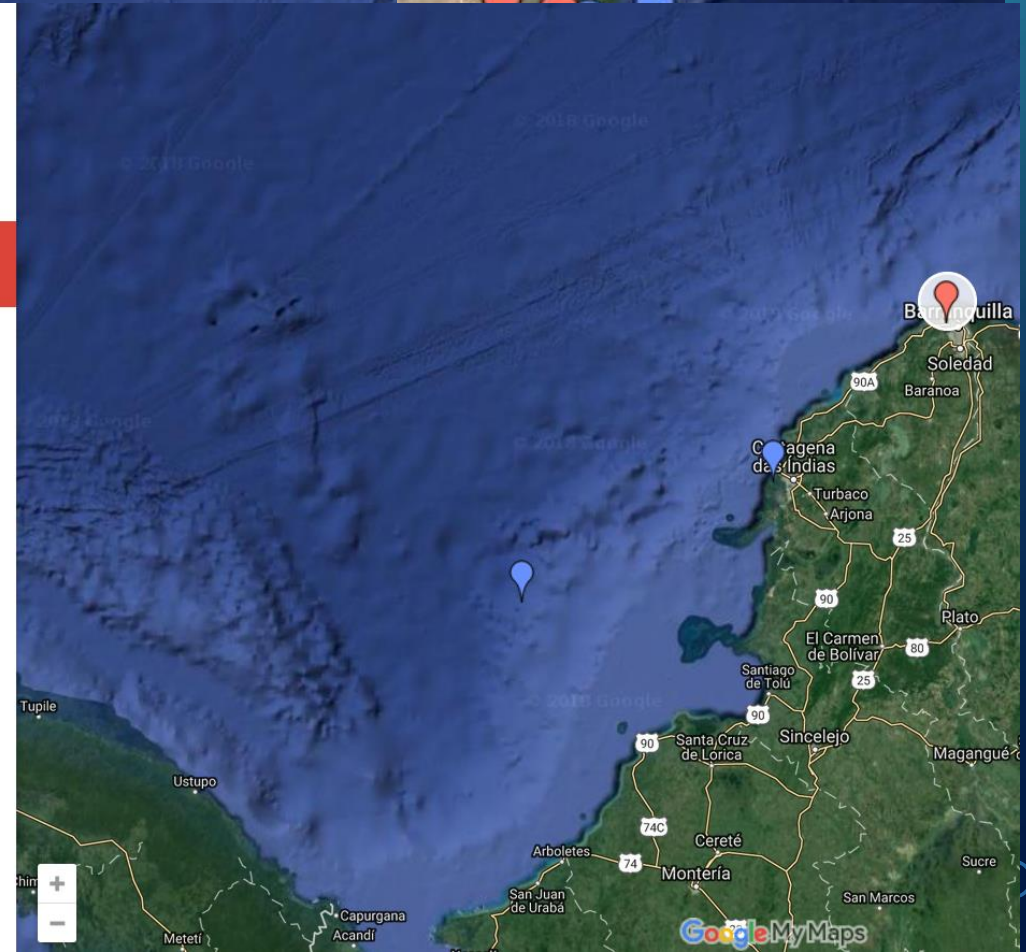
description

Name of the Institution:  
Instituto de Estudios Hidráulicos y Ambientales - IDEHA  
Departamento de Ingeniería Civil y Ambiental  
Universidad del Norte

Related Webpages:  
<http://www.uninorte.edu.co/web/investigacion-desarrollo-e-innovacion/detalle-de-producto?product=506>

Email: [ruedabayona@gmail.com](mailto:ruedabayona@gmail.com)

Address:  
Departamento de Ingeniería Civil y Ambiental  
Instituto de Estudios Hidráulicos y Ambientales - IDEHA  
Universidad del Norte  
A.A. 1569 - Barranquilla, Colombia



# ACTIONS DONE IN MOHID WEBPAGE

- Agreement: structure and person responsible for the contents:
  - Hydrodynamics (**Paulo**) Waves (**Paulo**) Turbulence (**Paulo**)
  - Particle Tracking (**Paulo**) Oil Spills (**Rodrigo**), HNS Residence Time (**Frank**), WQ, Sediments, fish larvae, Jet Model (**Paulo**) Buoyancy jet
  - Morphodynamics (**Guilherme**) sediments and sands (**Paulo**)
  - Water Quality (**Francisco**)
- Webpage code updated
- MOHID keywords moved to the Wiki
- Registry in the webpage no longer needed
- MOHID pages now have **Google Analytics**

# MOHID WEBPAGE IDEAS FOR THE FUTURE



- Include something like non hydrostatic, downscaling, assimilation, etc...
- Include fields of application such as aquaculture, larvae, HNS, outfalls, etc...

# MOHID WIKI

- Webpage code updated.
- Email is configured: in case that a user has forgotten its username now it is able to recover it
- Clean up (pages with obsolete information such as linking to codeplex code no longer existing webpages etc..)
- Create a MOHID Keywords wiki that will replace the keywords page (thanks to initial efforts of Robson) however the database is not complete and **contribution here is needed!**
- Encourage MOHID users to help maintaining and improving (**do you and your colleagues have already usernames and passwords?**) **Please send me an email of the people that will need a new account.**



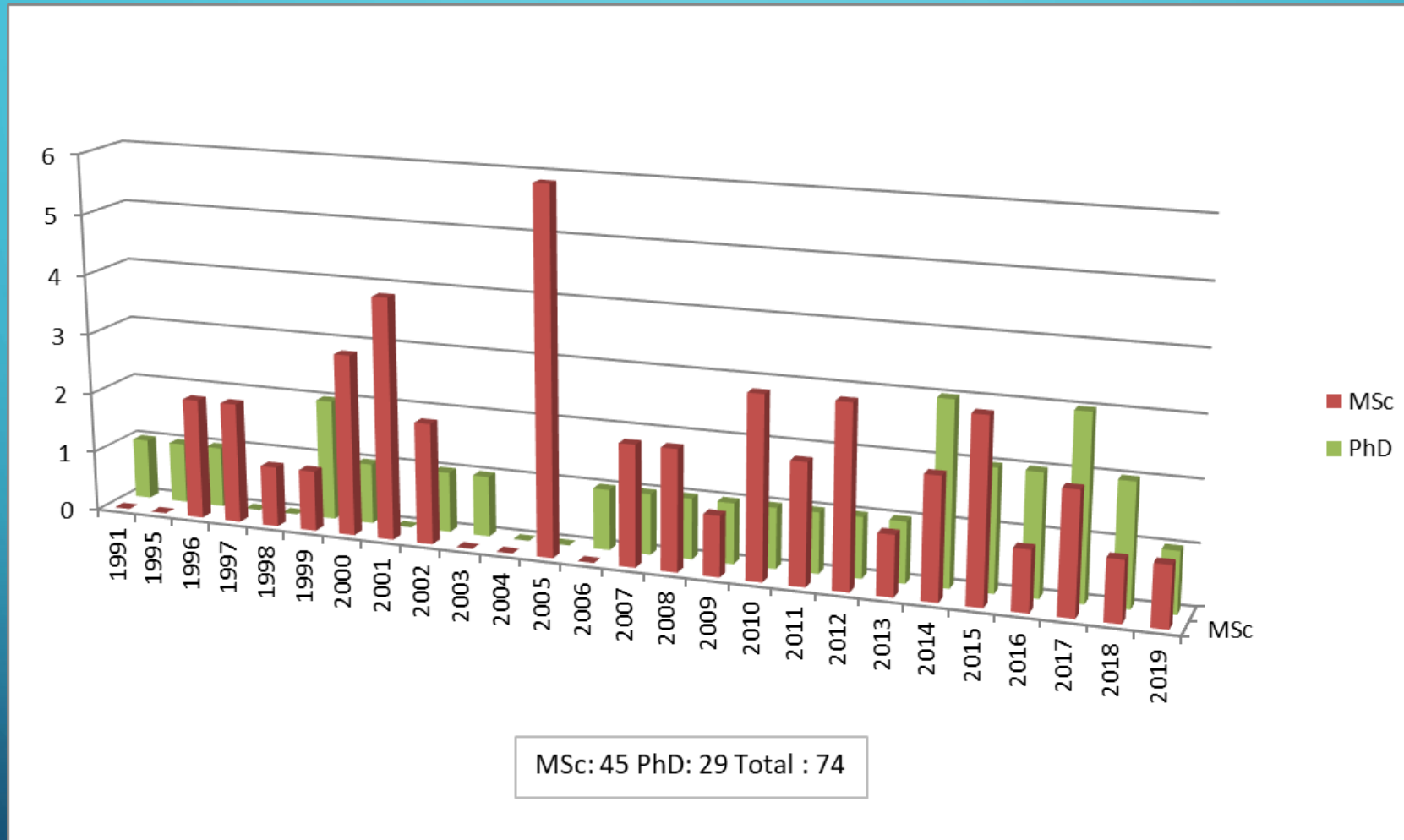
# MOHIDING – THE MOHID WORKING GROUP

- The idea is to generate an international MOHID Working Group progressively
- An annual meeting will be celebrated and every two years it will have the form of an international users meeting
- In this meeting, last year developments and planned developments will be shown and discussed.
- This action can be broadcasted to other partners that would like to follow the presentations and the presented material will be provided online (PPTs, vídeos, etc.).

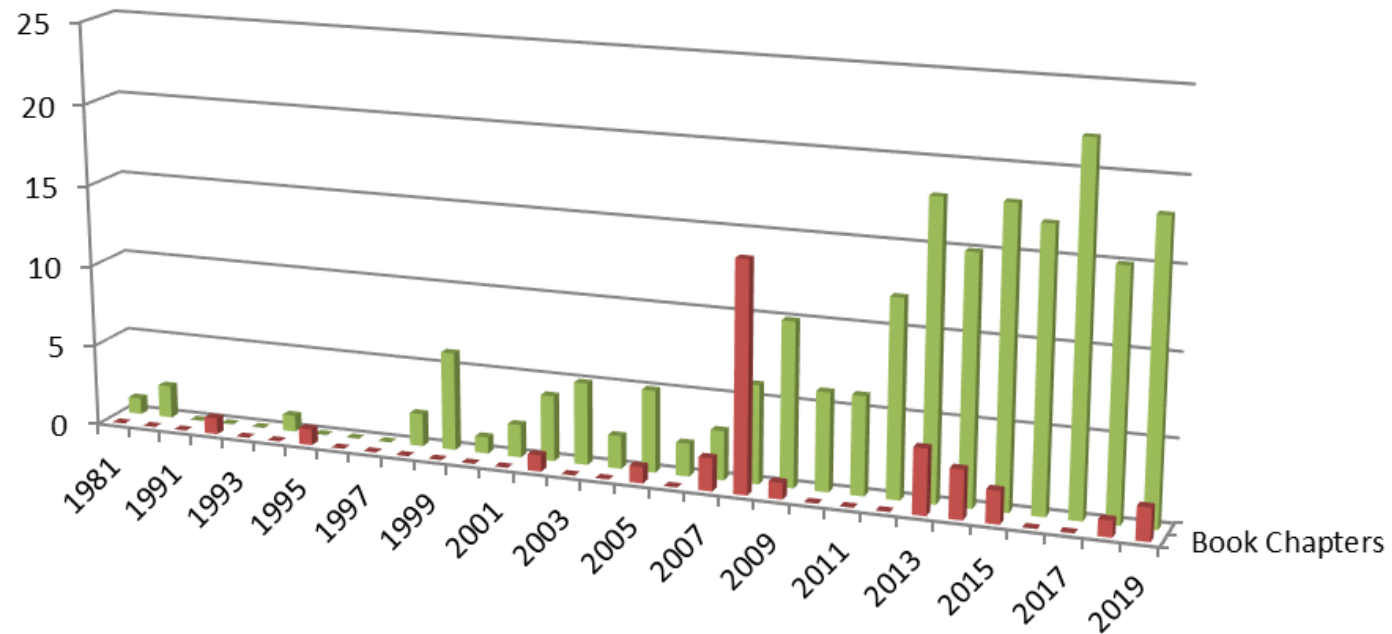
# MOHID OUTREACH

- Thesis
- Publications
- Documentation
- Courses
- Conferences
- Teaching

# THESIS USING MOHID



# PUBLICATIONS USING MOHID



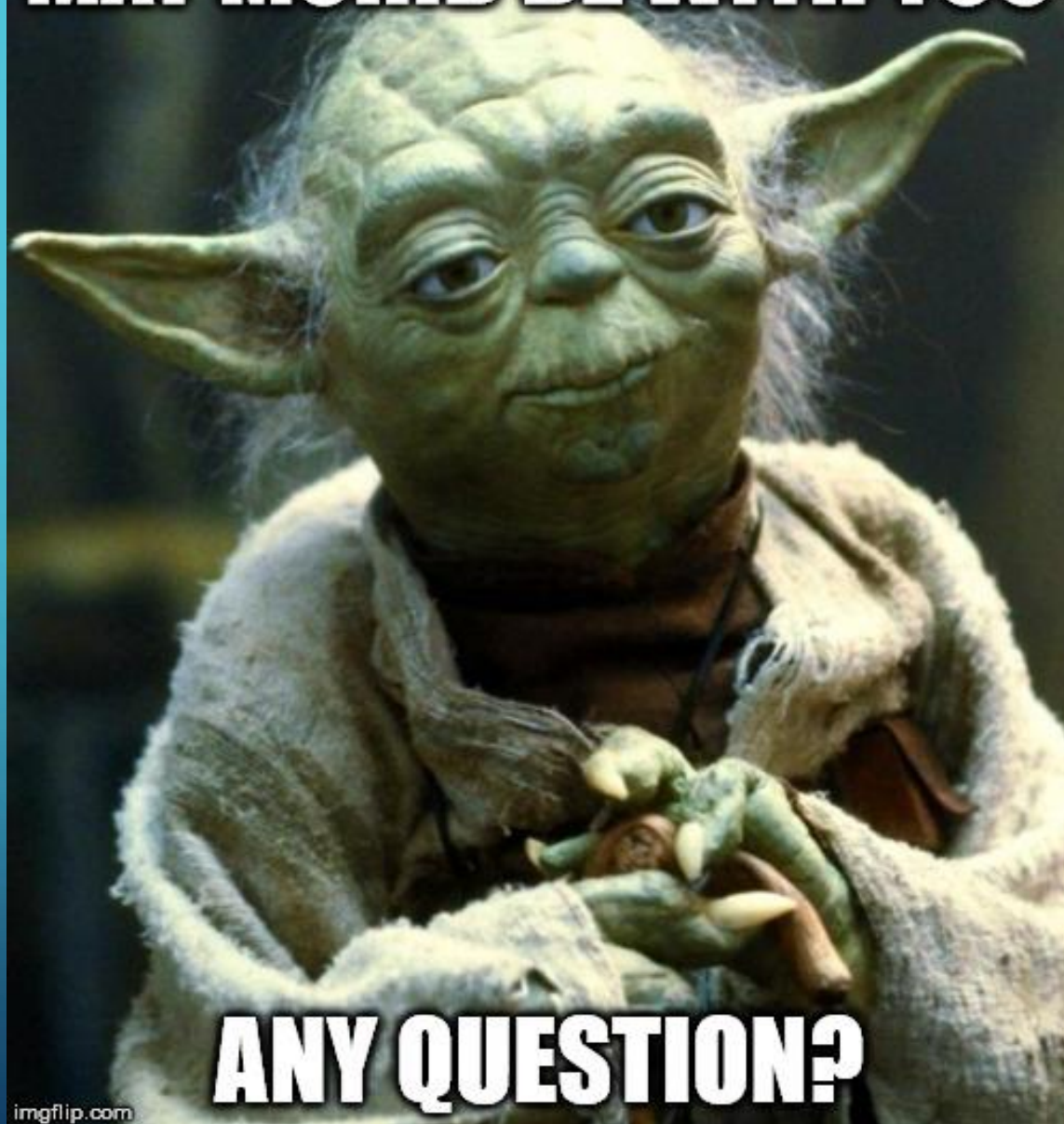
Book Chapters: 33 Journal: 199 Total : 232

Available for download at:

<http://wiki.mohid.com>



**MAY MOHID BE WITH YOU**



**ANY QUESTION?**

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