

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)
  - 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

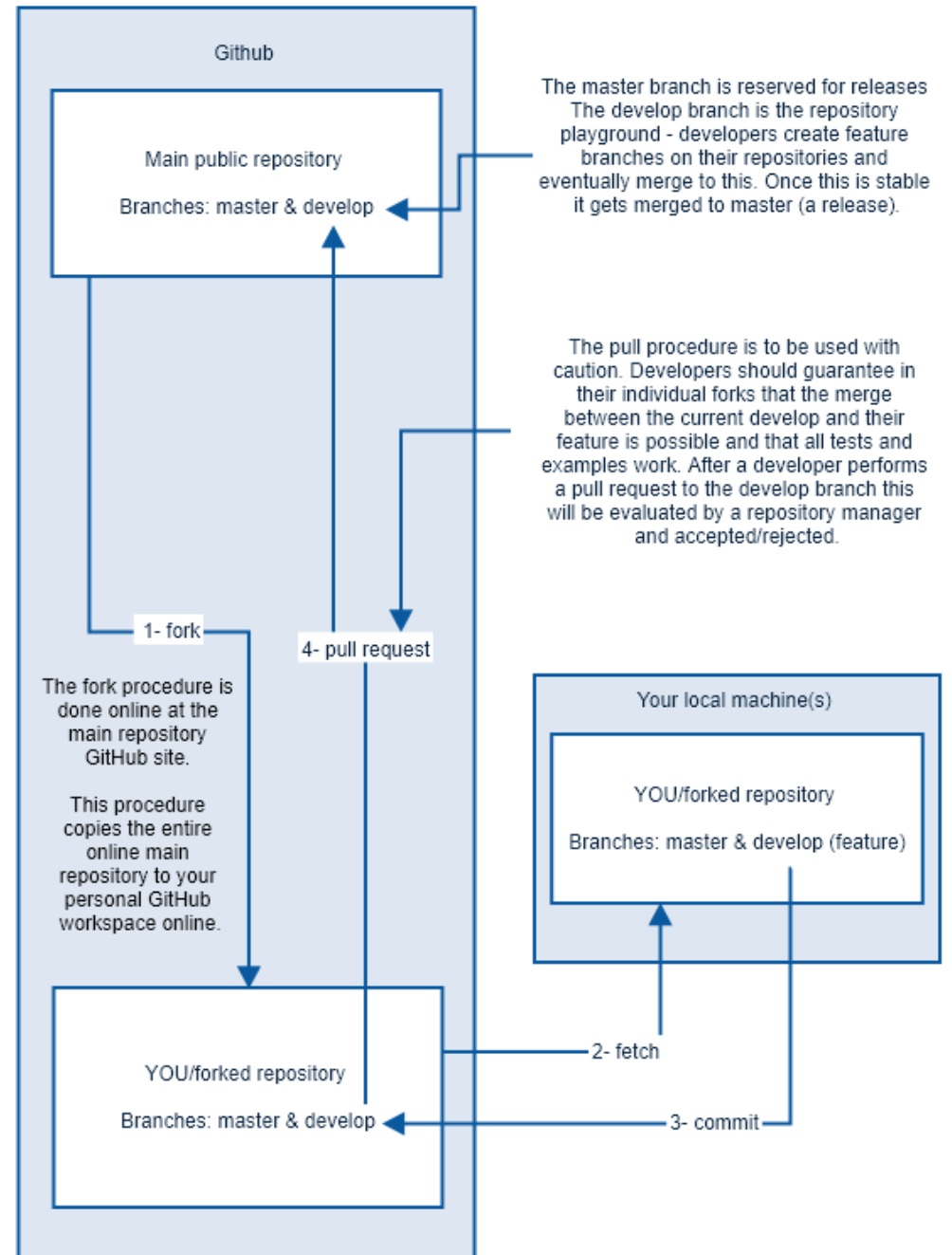
The MOHID ecosystem is large, complex, not easy to sustain and to get into. Many organizations have similar source characteristics, so tools to alleviate everyone's life are abundant, and they focus on some pillars:

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

# REPOSITORY MANAGEMENT

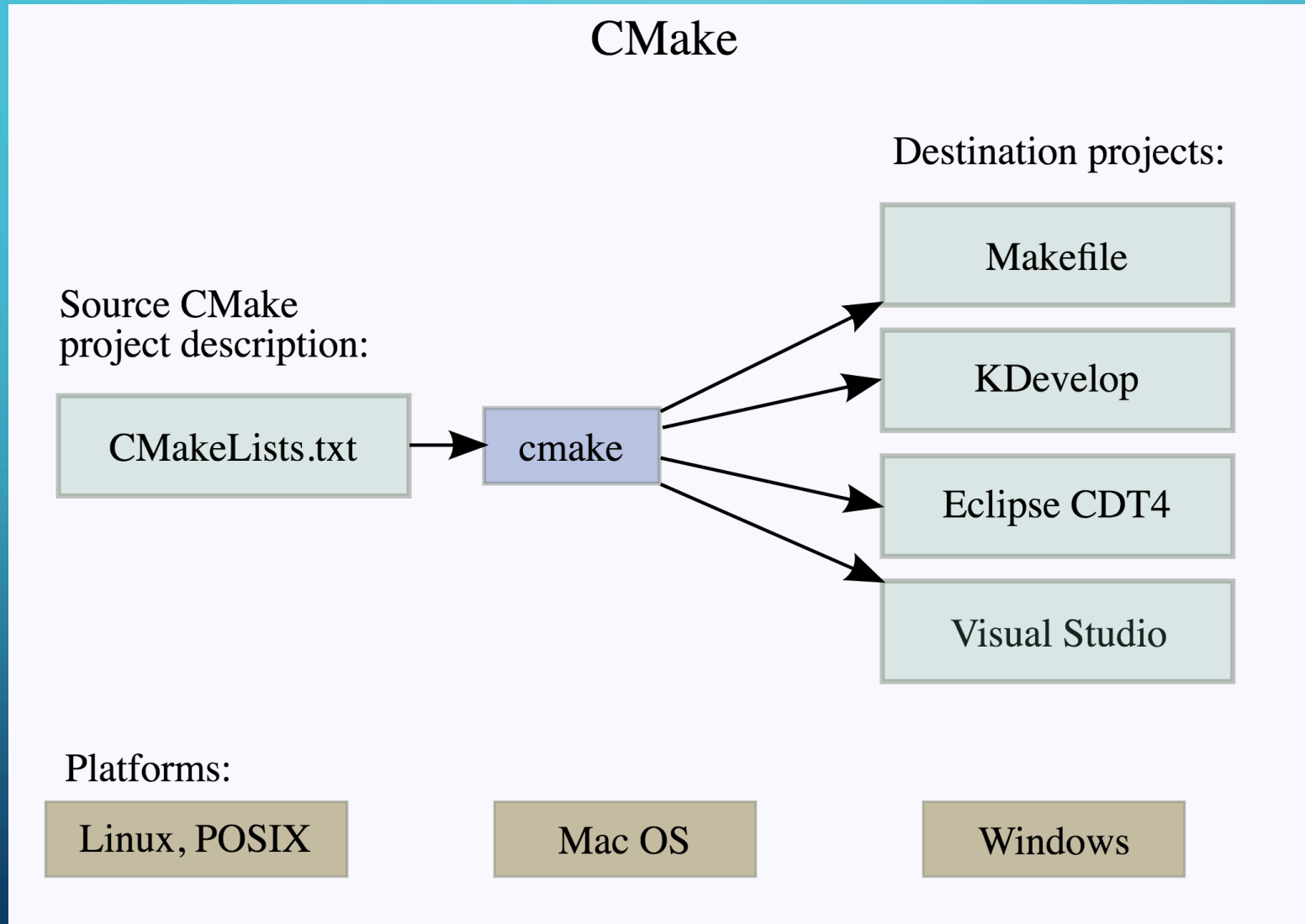
Adopt a set of rules , broadcast them and use them for every interaction with the repository.

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

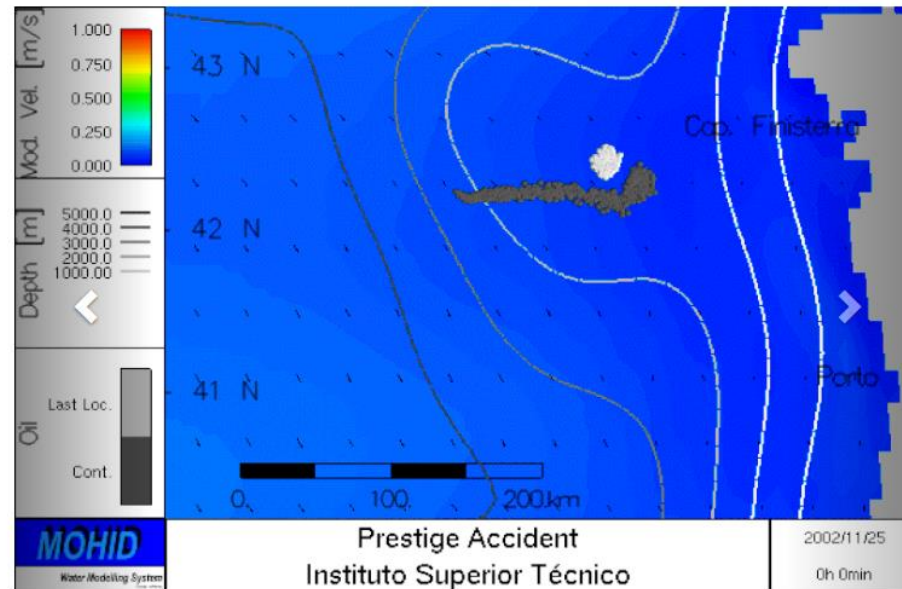
**MOHID**

Water Modelling System

Home ▾ Models ▾ Software ▾ Tools ▾ Learning ▾

## Since March 2017

MOHID - Water Modelling System



Applications Map  
Source Code  
Keyword Database  
Latest Release  
Bibliography  
Wiki  
Forum  
Courses  
News  
Contacts

MARETEC 2017 | Partners:





# MOHID COMMUNITY



Institutions



Mohid Water



Mohid Land



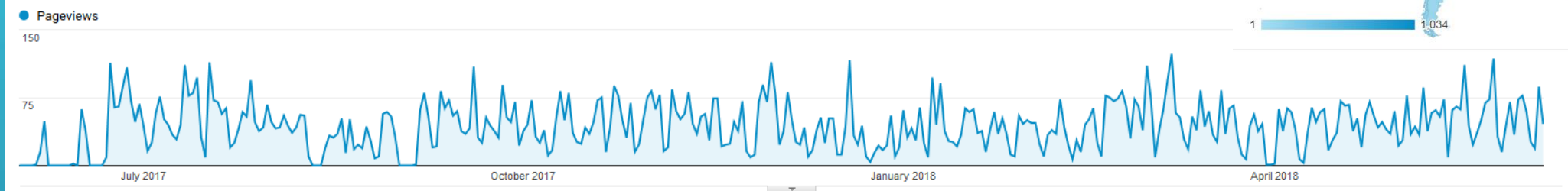
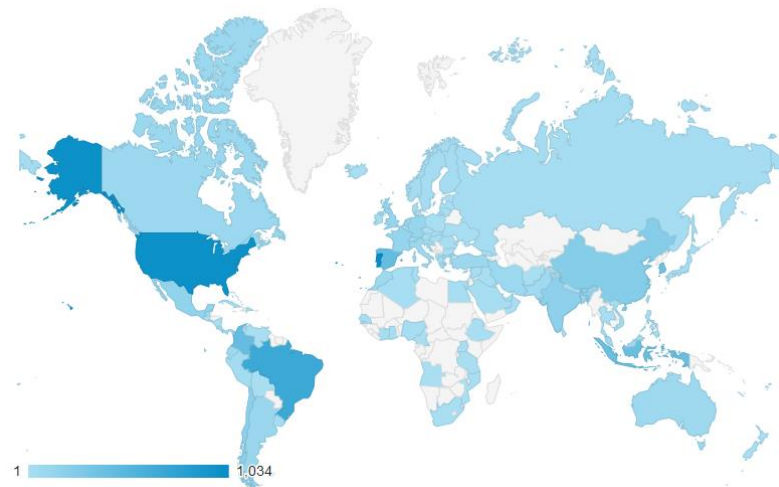


# ACTIONS DONE IN MOHID WEBPAGE

- 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 ANALYTICS

[HTTP://WWW.MOHID.COM](http://www.mohid.com)



Primary Dimension: **Page** Page Title Other

Plot Rows Secondary dimension Sort Type: Default

Page	Pageviews	Unique Pageviews	Avg. Time on Page	Entrances	Bounce Rate	% Exit	Page Value
	16,187 % of Total: 100.00% (16,187)	13,165 % of Total: 100.00% (13,165)	00:02:02 Avg for View: 00:02:02 (0.00%)	7,168 % of Total: 100.00% (7,168)	57.42% Avg for View: 57.42% (0.00%)	44.28% Avg for View: 44.28% (0.00%)	\$0.00 % of Total: 0.00% (\$0.00)
1. /	7,333 (45.30%)	5,795 (44.02%)	00:02:18	5,660 (78.96%)	55.42%	53.13%	\$0.00 (0.00%)
2. /pages/models/mohidwater/mohid_water_home.shtml	1,573 (9.72%)	1,251 (9.50%)	00:01:11	144 (2.01%)	54.17%	24.09%	\$0.00 (0.00%)
3. /pages/home/whatismohid.shtml	971 (6.00%)	839 (6.37%)	00:01:53	192 (2.68%)	67.71%	45.52%	\$0.00 (0.00%)
4. /pages/home/community.shtml	858 (5.30%)	756 (5.74%)	00:01:49	103 (1.44%)	55.34%	29.84%	\$0.00 (0.00%)
5. /pages/userinterfaces/mohidstudio.shtml	769 (4.75%)	665 (5.05%)	00:02:38	95 (1.33%)	72.63%	45.12%	\$0.00 (0.00%)
6. /pages/code/mohid_executables.shtml	753 (4.65%)	645 (4.90%)	00:03:18	68 (0.95%)	75.00%	44.75%	\$0.00 (0.00%)
7. /pages/support/courses.shtml	677 (4.18%)	598 (4.54%)	00:01:54	82 (1.14%)	67.07%	42.10%	\$0.00 (0.00%)
8. /pages/models/mohidwater/mohid_water_hydrodynamic.shtml	622 (3.84%)	481 (3.65%)	00:01:37	143 (1.99%)	64.34%	35.21%	\$0.00 (0.00%)
9. /pages/models/mohidland/mohid_land_home.shtml	604 (3.73%)	496 (3.77%)	00:01:54	146 (2.04%)	66.44%	42.22%	\$0.00 (0.00%)
10. /pages/models/mohidwater/mohid_water_particle.shtml	531 (3.28%)	419 (3.18%)	00:02:21	193 (2.69%)	64.25%	40.30%	\$0.00 (0.00%)

# MOHID WEBPAGE IDEAS FOR THE FUTURE



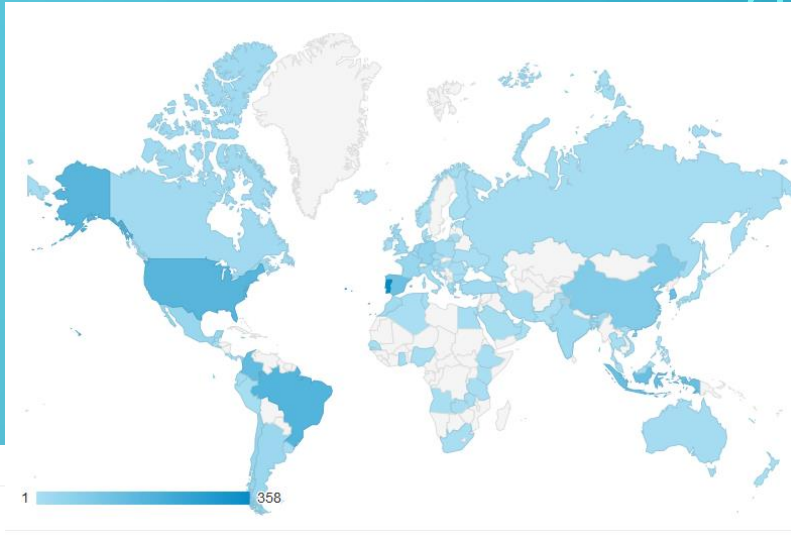
- Include something like non hydrostatic, downscaling, assimilation, etc...
- Include fields of application such as aquaculture, larvae, HNS, outfalls, etc...

# 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.**

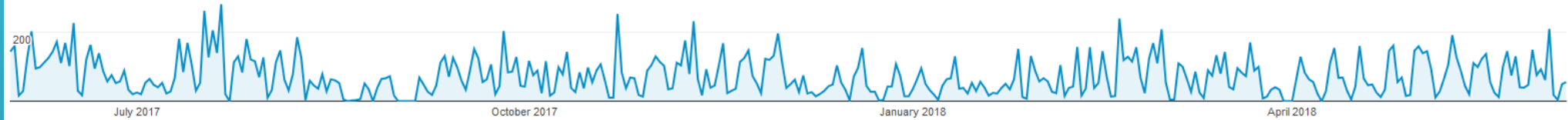
# MOHID WIKI ANALYTICS

## [HTTP://WIKI.MOHID.COM](http://wiki.mohid.com)



Pageviews

400



Primary Dimension: **Page** Page Title Other

Plot Rows

Secondary dimension

Sort Type:

Default

advanced

Page	Pageviews	Unique Pageviews	Avg. Time on Page	Entrances	Bounce Rate	% Exit	Page Value
	26,923 % of Total: 100.00% (26,923)	20,528 % of Total: 100.00% (20,528)	00:01:41 Avg for View: 00:01:41 (0.00%)	6,668 % of Total: 100.00% (6,668)	41.72% Avg for View: 41.72% (0.00%)	24.77% Avg for View: 24.77% (0.00%)	€0.00 % of Total: 0.00% (€0.00)
1. /index.php?title=Main_Page	4,123 (15.31%)	2,814 (13.71%)	00:00:54	2,352 (35.27%)	21.85%	17.41%	€0.00 (0.00%)
2. /index.php?title=Mohid_Bibliography	1,109 (4.12%)	918 (4.47%)	00:03:38	633 (9.49%)	70.46%	61.77%	€0.00 (0.00%)
3. /index.php?title=Mohid_Water	925 (3.44%)	652 (3.18%)	00:00:48	28 (0.42%)	35.71%	10.05%	€0.00 (0.00%)
4. /index.php?title=Keyword_list	846 (3.14%)	618 (3.01%)	00:04:33	280 (4.20%)	67.14%	52.48%	€0.00 (0.00%)
5. /index.php?title=Mohid_Support_Tools	693 (2.57%)	461 (2.25%)	00:01:17	245 (3.67%)	39.18%	21.79%	€0.00 (0.00%)
6. /index.php?title=Mohid_Water_Modelling_System	551 (2.05%)	359 (1.75%)	00:00:20	9 (0.13%)	0.00%	3.99%	€0.00 (0.00%)
7. /index.php?title=Mohid_Land	531 (1.97%)	379 (1.85%)	00:01:22	55 (0.82%)	40.00%	22.03%	€0.00 (0.00%)
8. /index.php?title=ConvertToHDF5	442 (1.64%)	306 (1.49%)	00:04:52	151 (2.26%)	60.26%	49.10%	€0.00 (0.00%)
9. /index.php?title=Software_to_run_Mohid	340 (1.26%)	234 (1.14%)	00:01:59	38 (0.57%)	42.11%	20.29%	€0.00 (0.00%)
10. /index.php?title=Mohid_Ocean_Downscaling	338 (1.26%)	302 (1.47%)	00:04:11	74 (1.11%)	56.76%	54.73%	€0.00 (0.00%)

# MOHID FORUM

- The most challenging one!
- Strategy: MOHID support provided by the MOHID forum, redirect emails to the forum as was done initially to me.
- The managing is complicated as there are many spammers that vandalize it and currently only administrators are able to provide access.
- Number of areas were reduced and MOHID GUI and GIS were declared obsolete
- Those persons can receive by email when there is a new question or answer by subscribing to the forum, you can find it below in the bottom.

[Board index](#) / [Subscribe forum](#) / [ACP](#) / [Contact us](#) / [Delete all board cookies](#) / All times are UTC



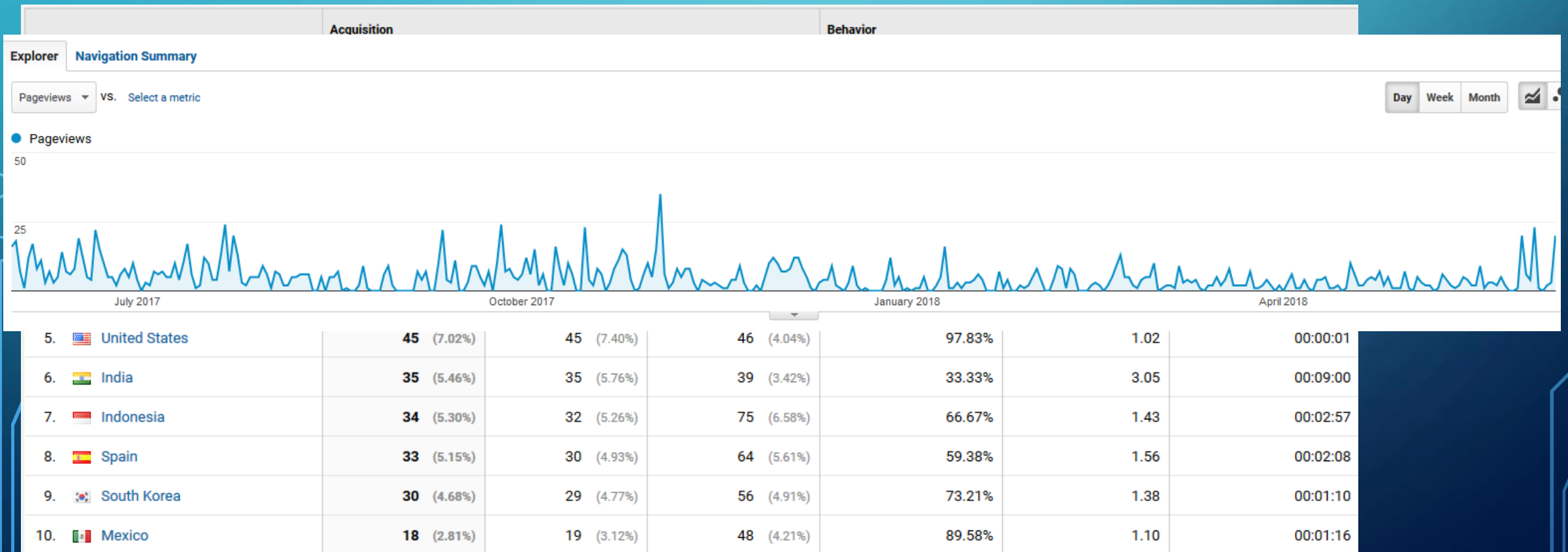
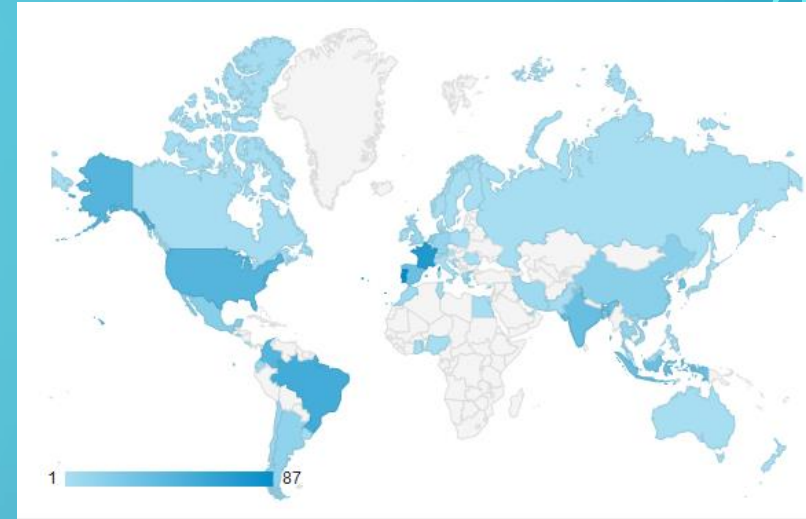
# MOHID FORUM

- Board watch defined:
- MOHID General: General Announcements (New Downloads, etc) (**Francisco**)
- MOHID Water: (**Luis, João Sobrinho**, Paulo ...)
- MOHID Land: (**David**, Carina, Pedro Chambel, Lucian,...)
- MOHID GUI: (moved to tools folder and indicated as discontinued - ✓**Done**)
- MOHID GIS: (moved to tools folder and indicated as discontinued - ✓**Done**)
- MOHID Tools: (**João Sobrinho**, João Rodriguez, ...)
- MOHID Programming: (**Frank**, Paulo, João...)
- MOHID SWAT: (**Pedro Chambel**) (moved to MOHID LAND folder)
- MOHID Studio: (**Frank**, David, Luis..)

The screenshot shows the MOHID Forum website. At the top, there's a header with the title "MOHID Forum" and the subtitle "Forum about MOHID Water Modelling System". Below the header is a navigation bar with links for "FAQ", "Search", and "The team". A banner image shows a map with blue arrows indicating flow direction. Below the navigation bar is a "Board index" section listing various forums: "MOHID General" (General Announcements), "MOHID Water" (Questions and discussions), "MOHID Land" (Questions and discussions, with a subforum for "MOHID SWAT"), "MOHID Tools" (Discussion about support tools, with subforums for "MOHID GUI" and "discontinued"), "MOHID Programming" (Information about programming), and "MOHID Studio" (General discussion). Below the forum list is a "LOGIN • REGISTER" section with input fields for "Username:" and "Password:". Further down is a "WHO IS ONLINE" section stating "In total there are 4 users online :: 1 registered, 0 hidden" and "Most users ever online was 59 on Thu Apr 06, 2017 02:14". It also lists "Registered users: Google [Bot]" and a "Legend" for "Administrators" (red) and "Global moderators" (green). At the bottom is a "STATISTICS" section showing "Total posts 4261 • Total topics 1312 • Total members 131".

# MOHID FORUM ANALYTICS

## [HTTP://FORUM.MOHID.COM](http://forum.mohid.com)





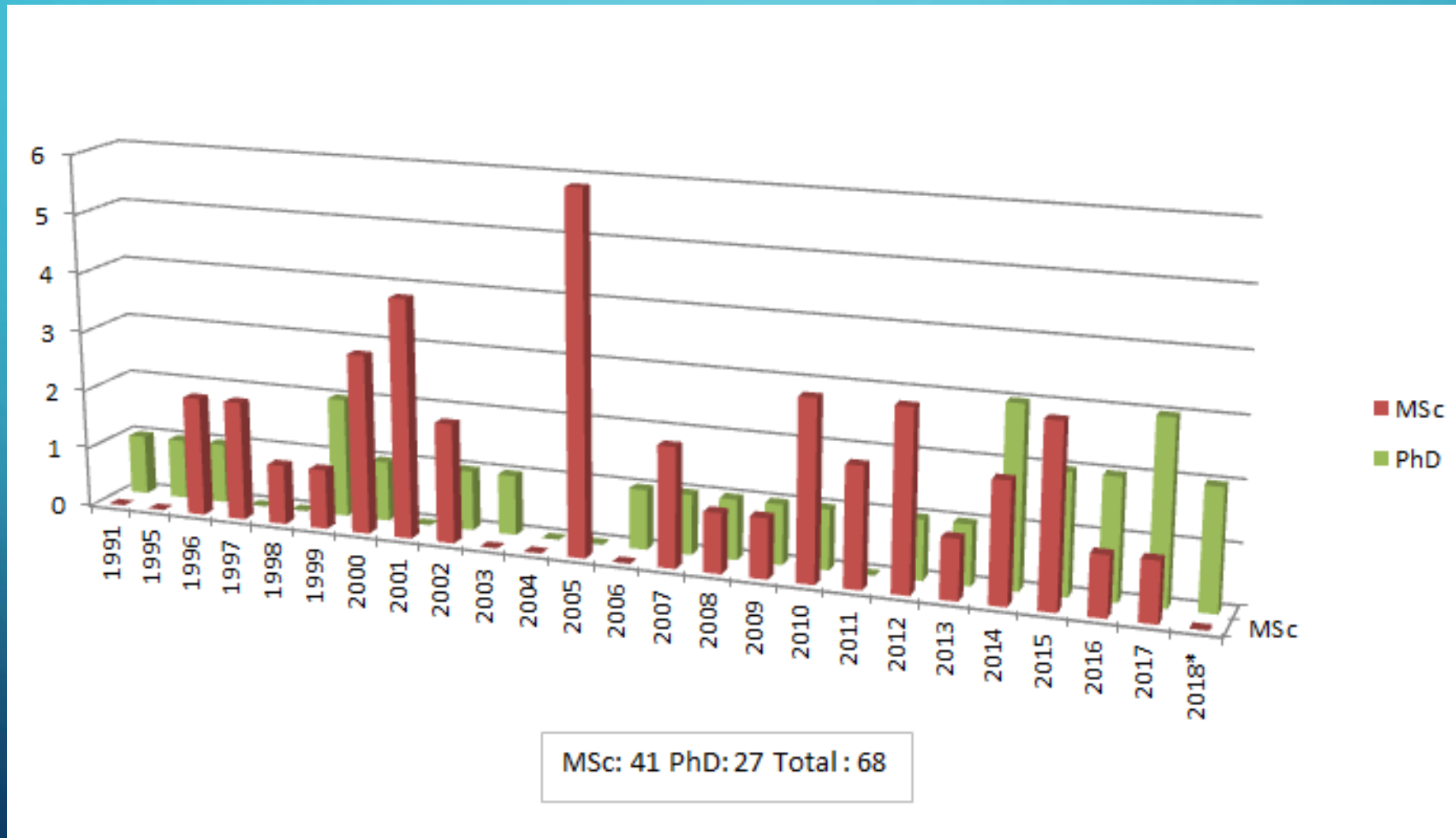
# MOHIDING – THE MOHID WORKING GROUP

- 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

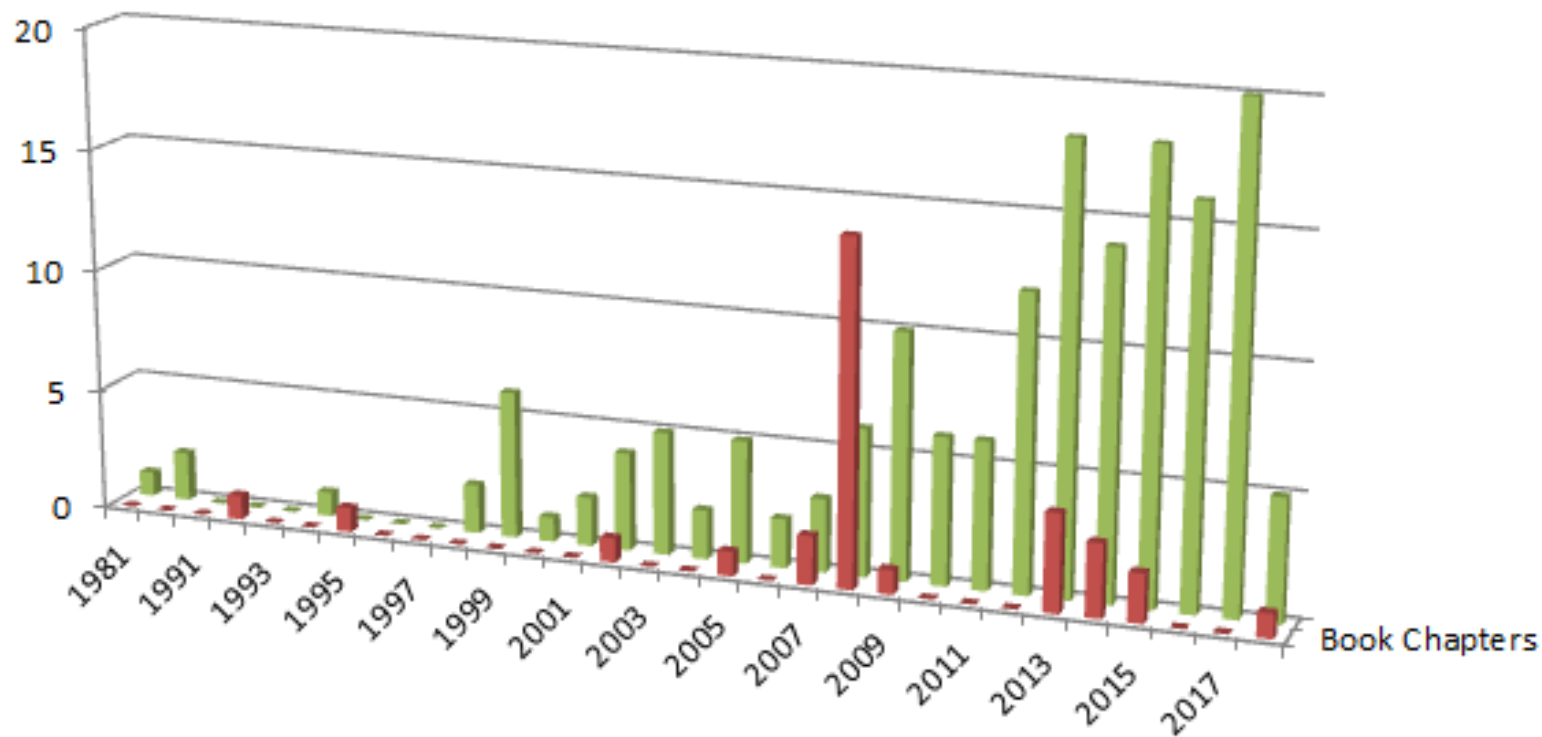
# THESIS USING MOHID



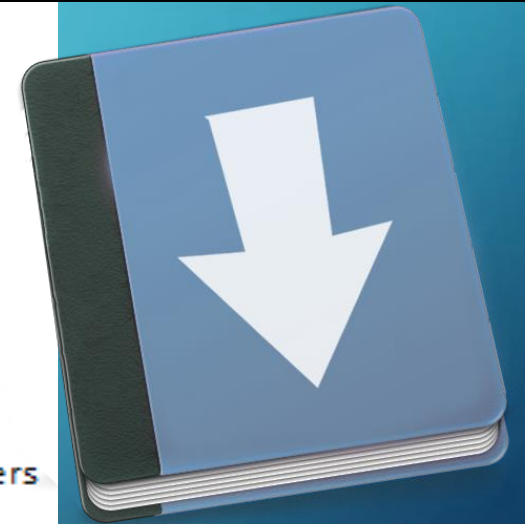
# PUBLICATIONS USING MOHID

Available for download at:

<http://wiki.mohid.com>

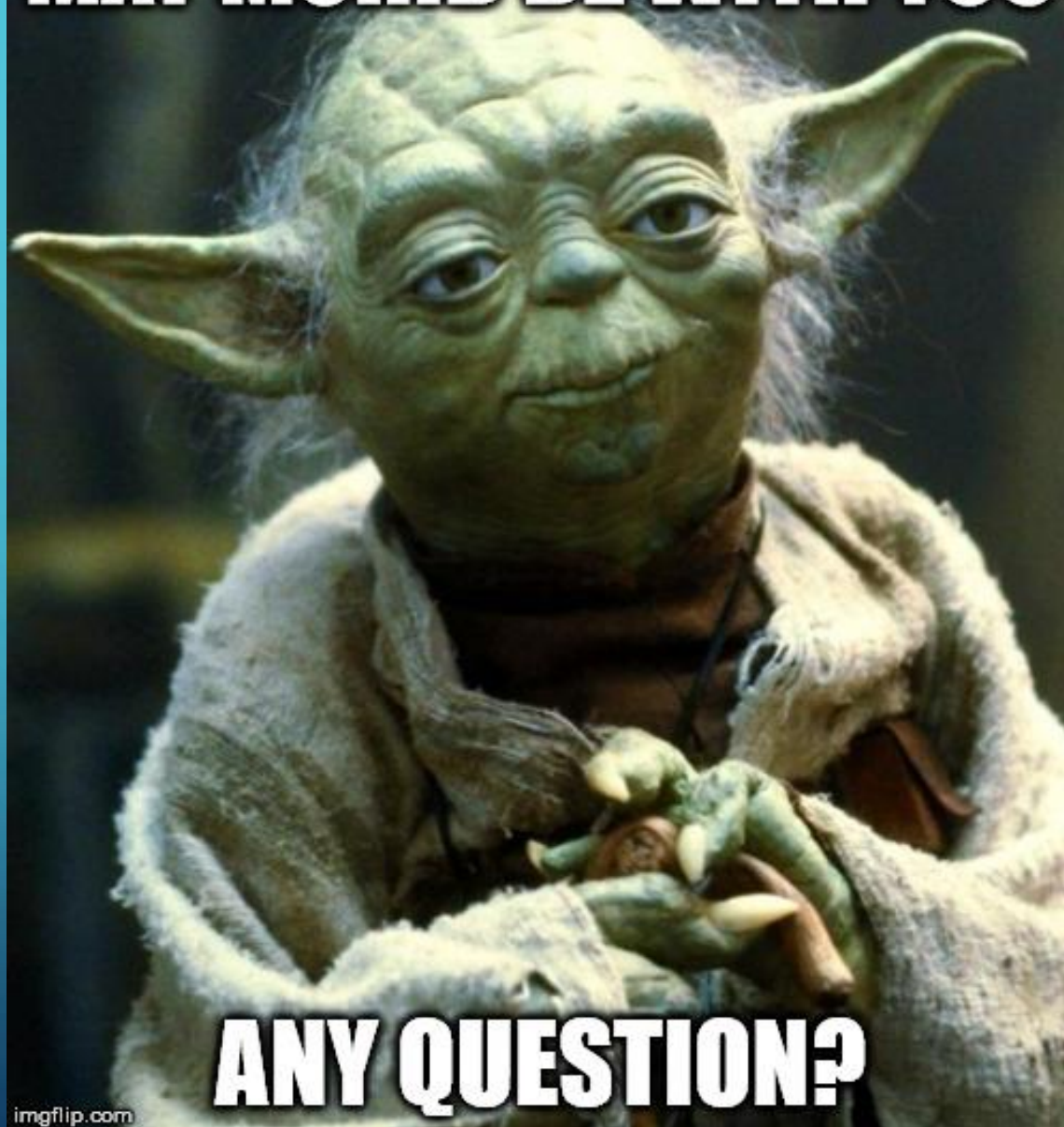


Book Chapters: 31 Journal: 167 Total : 198





**MAY MOHID BE WITH YOU**



**ANY QUESTION?**