



Tsunami-HySEA:

Introduction & tips on installation (II)

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Tsunami-HySEA

- Access to the Computing Services
- Graphical output
- Example in the Mediterranean
- T-HySEA webplatform.



Connection with the VM or Computer Services

Normally the access to the Computer Services uses SSH protocol.

General access:

```
ssh -XY username@computer_name
```

Windows: Putty

OS-X: Terminal

Linux: Terminal



Connection with the VM or Computer Services

Tips:

How to enable a graphical user interface (X-Windows or X11)?

Windows: Putty + Xming or MobaXterm

OS-X: Terminal + XQuartz

Linux: Terminal + X11



Connection with the VM or Computer Services

In our case we can use:

- Web based ssh service provided by Google Cloud (no graphical interface)
- Gcloud tool with graphical connection.

Example:

```
./gcloud compute ssh --ssh-flag="-X" --zone "us-central1-a" "tsunami-hysea" --project "civic-abode-420411"
```



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Tsunami-HySEA: open source version

edanya-uma / Tsunami-HySEA Public

Notifications Fork 0 Star 5

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main 1 Branch 3 Tags Go to file Code

File	Last update	Commits
Mediterranean	Example directory	last year
src	updated to version 1.1.1	9 months ago
.gitignore	TsunamiHySEA opensource code	3 years ago
CITATION.cff	updated CITATION	2 weeks ago
CODE_OF_CONDUCT.md	Updated info files	10 months ago
CONTRIBUTING.md	Updated info files	10 months ago
LICENSE.md	Updated license	10 months ago
README.md	updated README	2 weeks ago

README Code of conduct License

Tsunami-HySEA 1.1.1

Introduction

HySEA (Hyperbolic Systems and Efficient Algorithms) is a high-performance package developed by the EDANYA group at the University of Málaga, Spain, for the simulation of geophysical flows.

About

Tsunami-HySEA is a module of HySEA to simulate tsunamis generated by earthquakes

- Readme
- View license
- Code of conduct
- Cite this repository
- Activity
- 5 stars
- 2 watching
- 0 forks

Report repository

Releases 1

v1.1.1 (Latest) 2 weeks ago

Packages

No packages published

Contributors 2

- edanya-uma EDANYA Research Group
- t-morales Tomás Morales de Luna



Tsunami-HySEA: open source version

Tsunami-HySEA open source				
Version	Subversion	Subsubversion	Release date	Main features
1	1	0	abr-23	Added the possibility to initialize the tsunami source with standard Okada Added time series Added reading of meshes in grd format
1	1	1	jun-23	Corrected initialization of numPuntosSave in Problema.cxx so that it is always initialized Corrected the precedence bug with the & operator in getKernelBlockSize Fixed "length" in the help text when running the program without arguments Added "Time series: yes/no" when displaying problem information Added "return 1" if there is not enough GPU memory when reserving d_positionsVolumesSaved Added initialize etaMinSavedPoints (and etaMax) in the else of the if after initTimeSeries Moved start of timer to before getDeltaTInitialLevel0 Changed the value of "comments" and "references" from "" to " " in the output NetCDF files Print Okada values in the output NetCDF files with 4 decimal places

Current version of Tsunami-HySEA v4.3.1



Running computations with Tsunami-HySEA

Example included in this version of HySEA:

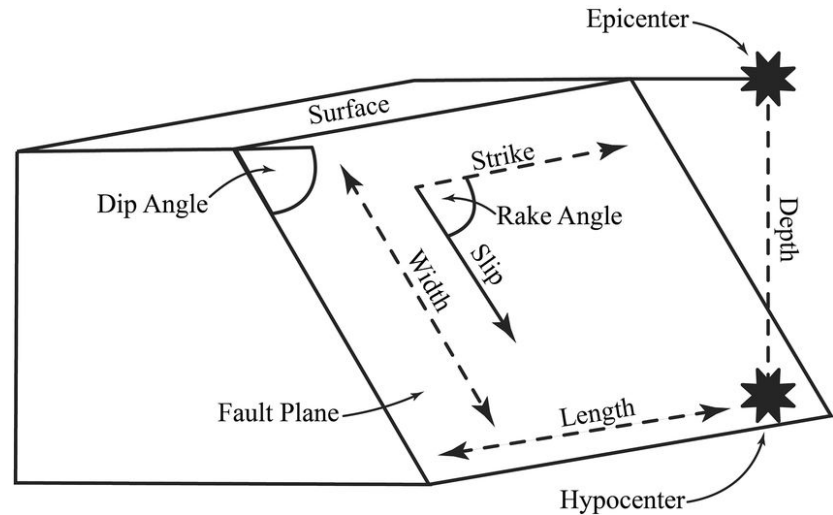
- Mediterranean.grd
- mediterranean.txt



Running computations with Tsunami-HySEA

Example included in this version of HySEA:

- Mediterranean.grd
- mediterranean.txt



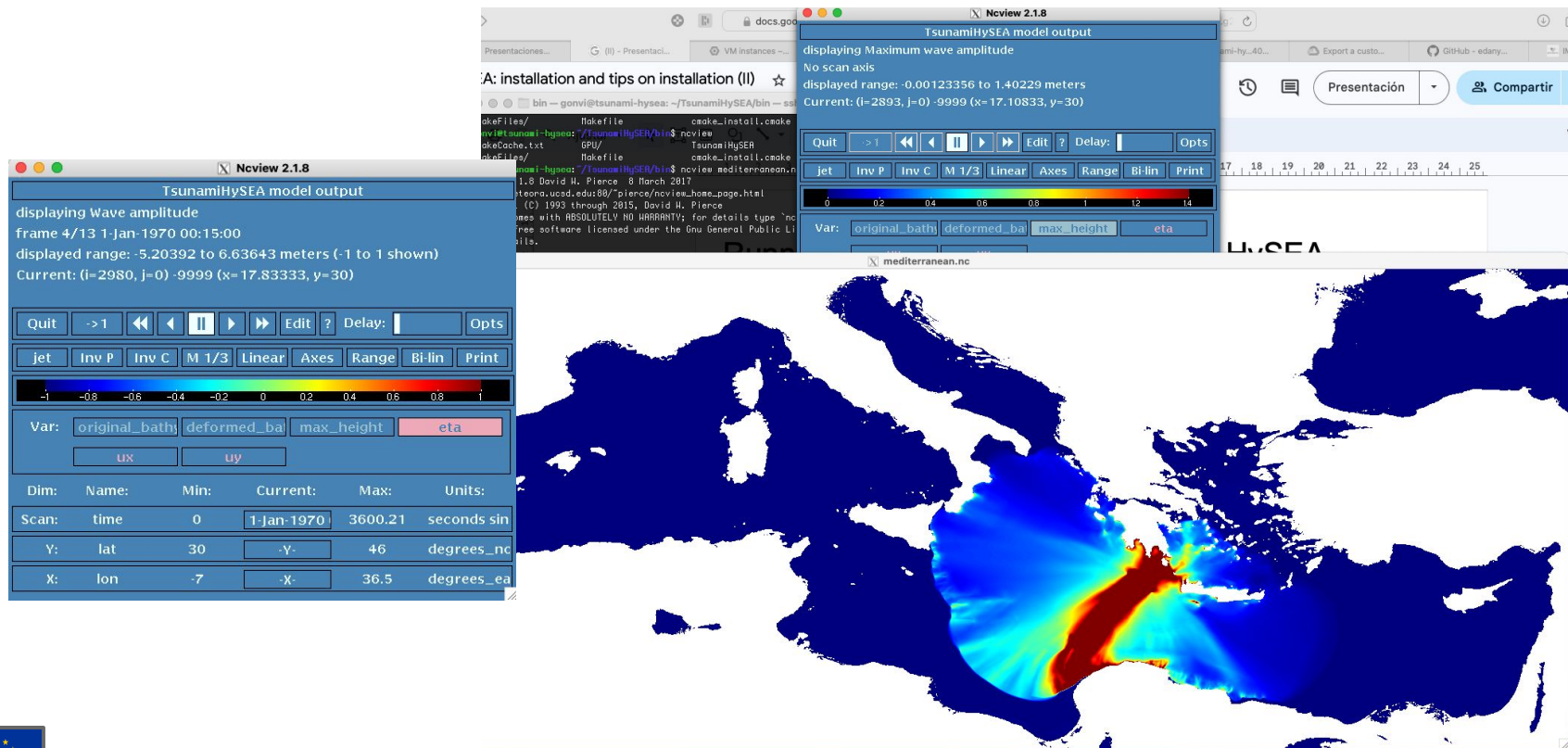
Running computations with Tsunami-HySEA

```
bin — gonvi@tsunami-hysea: ~/TsunamiHySEA/Mediterranean — ssh · gcloud.py compute ssh --ssh-flag=-X...
IH  mediterranean.txt (Modified) Row 1 Col 36
Mediterranean # Experiment name
Mediterranean.grd # Bathymetry file name
1 # Initialization type (0: From file, 1: Standard Okada)
22.30 35.70 16.33 100.0 50.0 313.0 35.0 90.0 8.40 # Lon-epicenter Lat-epicenter Depth-hypocenter Fault-length
mediterranean # NetCDF file prefix for level 0
1 # Number of levels
1 # Upper border condition (1: open, -1: wall)
1 # Lower border condition
1 # Left border condition
1 # Right border condition
14401.0 # Simulation time (sec)
3600 # Saving time of NetCDF files (sec) (-1: do not save)
0 # Read points from file (0: no, 1: yes). Used for time series
0.5 # CFL
5e-3 # Epsilon h (m)
20 # Threshold for the 2s+WAF scheme (m)
0.2 # Stability coefficients for each level, starting from level 0
0.03 # Water-bottom friction (Manning coefficient)
100 # Maximum allowed velocity of water
100000 # L (typical length)
1000 # H (typical height)
```

Leapfrog Geo imports the following 2D grid formats:

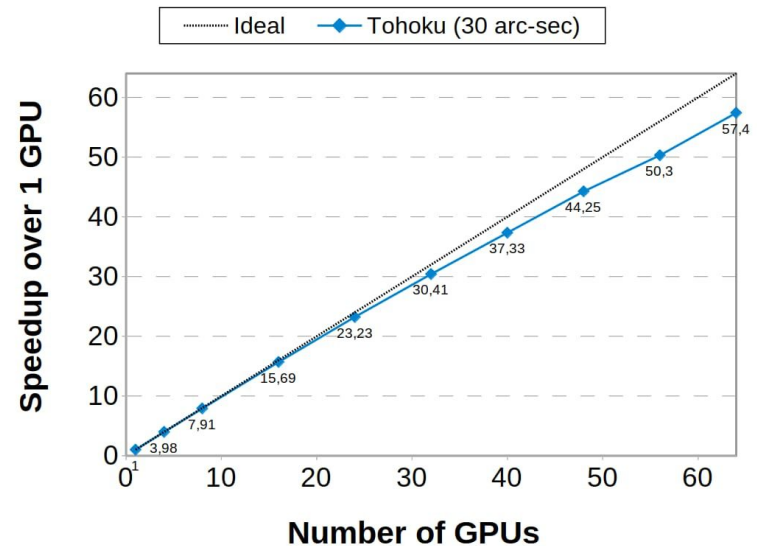


Running computations with Tsunami-HySEA



Other Tsunami-HySEA features

- MultiGPU (load balancing)
- Multi-Okada
- Nested Grids
- MonteCarlo version
- Async-writing, Variable friction, Gaussians, Triangular faults, Kajiura filter, etc...



Example in the whole Pacific with a 336,8M cells grid

SIGN IN

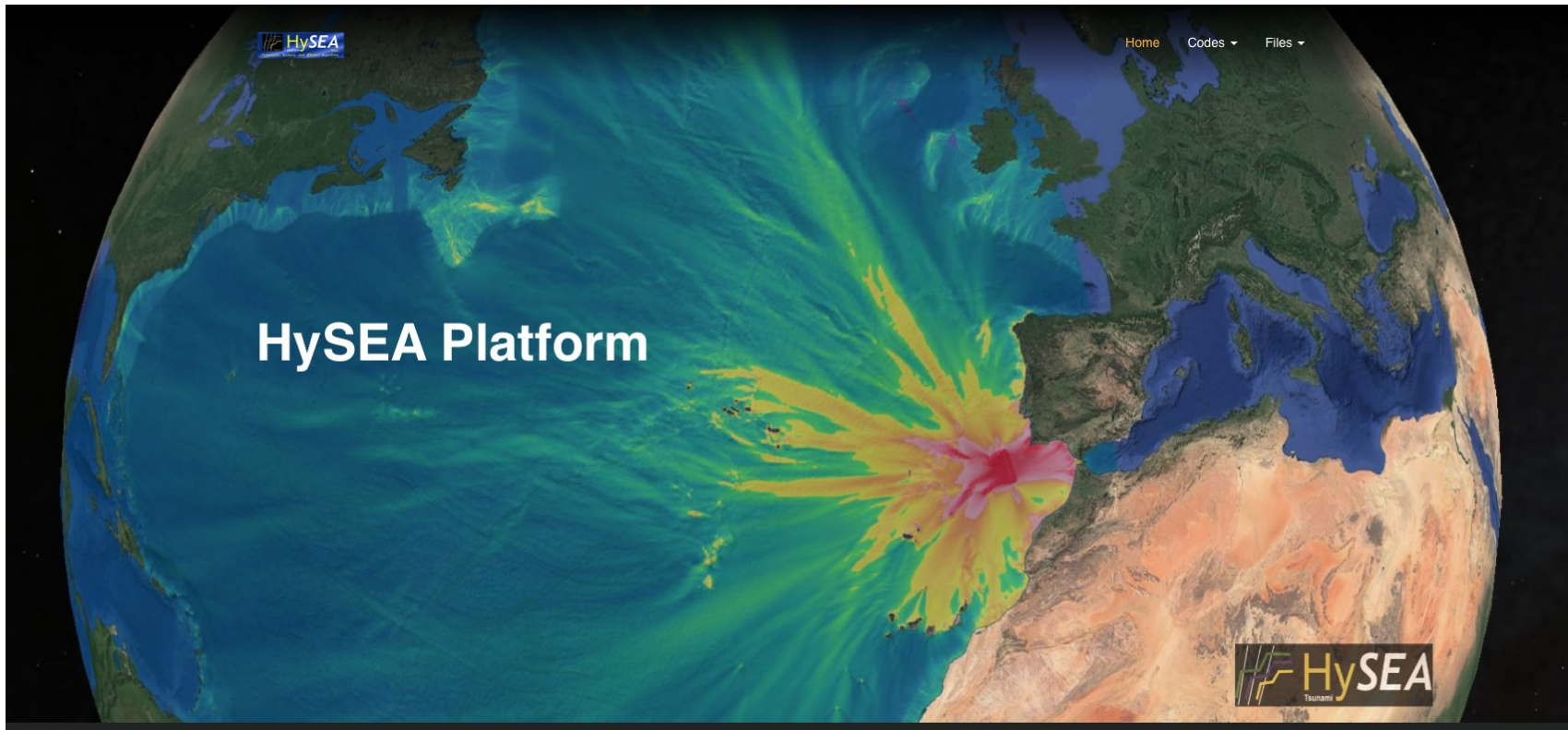
USERNAME

PASSWORD

SIGN IN

Tsunami-HySEA platform: SaaS





Thank you for your attention!

Geo-INQUIRE is a joint effort of 51 institutions



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