EGI-Engage

iCOMCOT Web Portal User's Guide

Date	18 May 2016
Activity	WP6
Lead Partner	Academia Sinica
Document Status	FINAL
Document Link	https://documents.egi.eu/document/2784

Abstract

This user guide describes the user interfaces of iCOMCOT Web Portal. iCOMCOT is a web portal services to simulate the entire lifespan of a tsunami, from its generation, propagation and runup/rundown on coastal regions, by the Cornell Multi-grid Coupled Tsunami Model (COMCOT).

The EGI-Engage project is co-funded by the European Union (EU) Horizon 2020 program under Grant number 654142 http://go.egi.eu/eng

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DOCUMENT LOG

Issue	*Date*	*Comment*	*Author/Partner*
v.1	14/04/16	Document creation	E. Yen/ AS

TERMINOLOGY

A complete project glossary is provided at the following page: http://www.egi.eu/about/glossary/

Contents

1 Introduction

iCOMCOT is a web portal services to simulate the entire lifespan of a tsunami, from its generation, propagation and runup/rundown on coastal regions, by the Cornell Multi-grid Coupled Tsunami Model (COMCOT). iCOMCOT portal provides the ease-to-use web interface to simulate a tsunami event after defining only the local mechanism, simulation region and tidal stations, by hiding complex scientific configuration process. In addition, to speed up the simulation, iCOMCOT takes advantages of OpenMP computing model and distributed cloud resources over the e-Infrastructure.

User only needs the web browser to access to the iCOMCOT web portal services. The following browsers are supported:

- Chrome 3+
- Firefox 3.5+
- Opera 12+
- Safari 4+
- Internet Explorer 8+

2 Main Page

From the main page, user could apply for a personal account or login to the services. Background and contact information of iCOMCOT web portal services could be also found at the iCOMCOT web homepage as in Figure 1

Figure 1iCOMCOT Web Portal Homepage

3 Simulation Workflow

After logging in, simulation starts from filling in parameters of focal mechanisms. Figure 2 shows an example of earthquake outside the east coast of Taiwan, an event of scale 7.1.

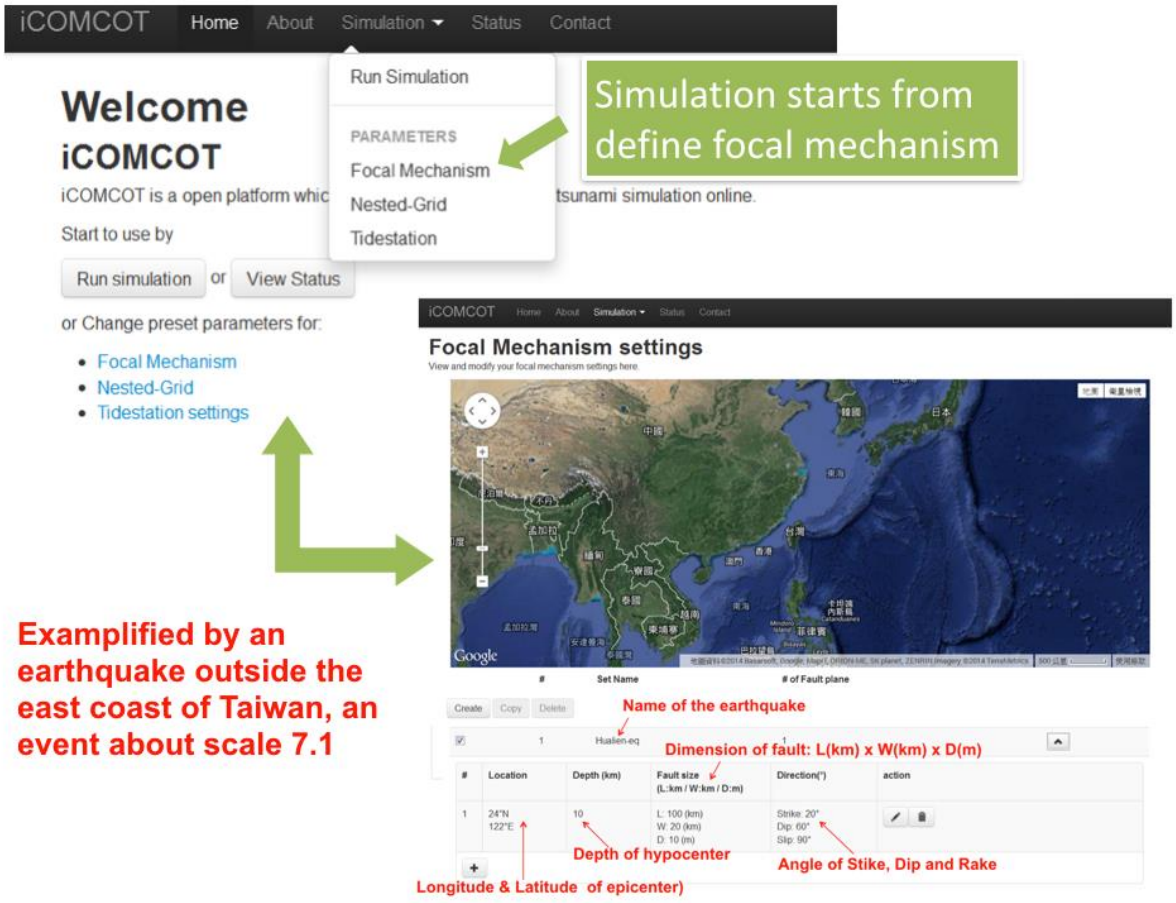

Figure 2 Define the focal mechanism

Then, define simulation region of an event as Figure 3, and followed by defining the observation stations as Figure 4.

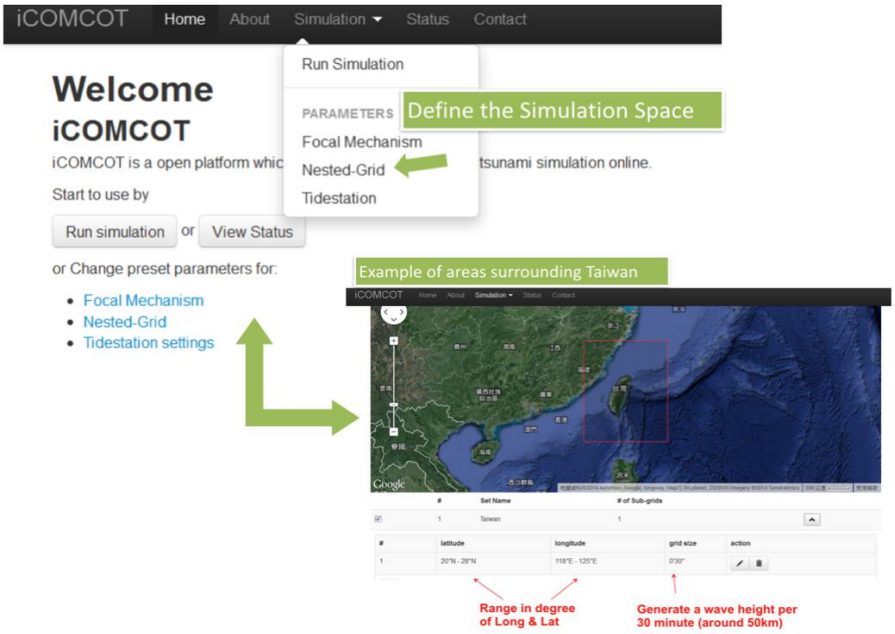

Figure 3 Define the Simulation Space

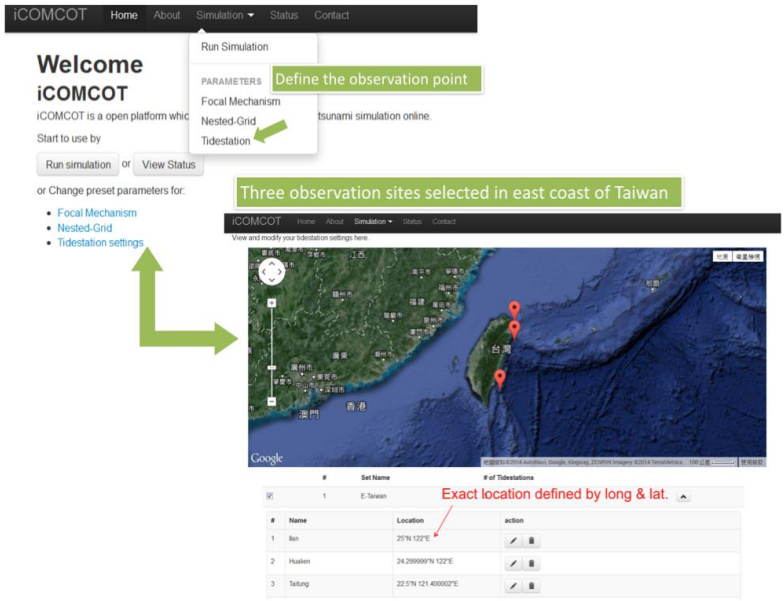

Figure 4 Define the Observation Points

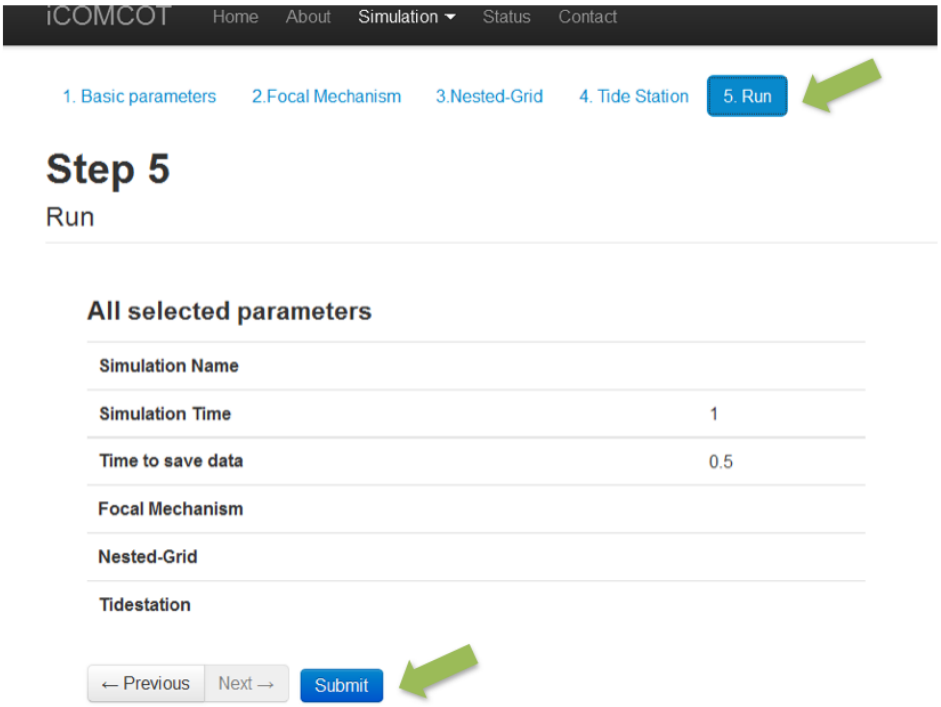

Figure 5 Job submission

When all these required parameters are set and then submit to simulation job to run.

Job status would be updated and checked at the web portal as Figure 6.

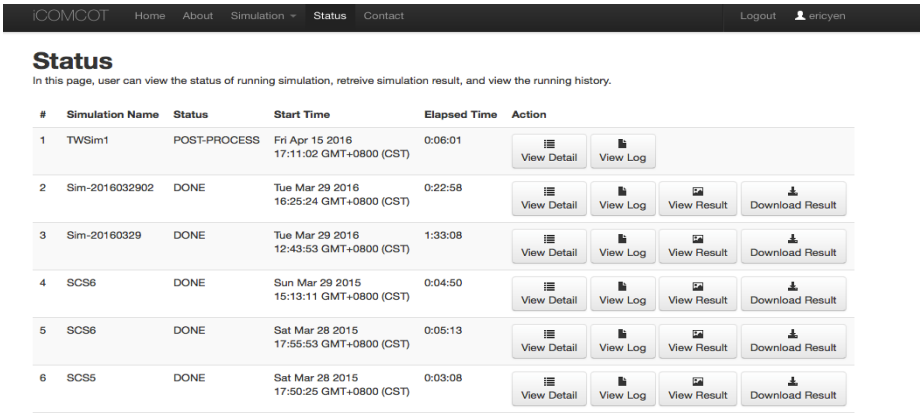

Figure 6 Job Status Check from the Web Portal

4 Result Visualization

Simulation results include the initial surface, maximum wave height (Figure 7), wave height records in time series at each observation point (tide station)(Figure 8), wave propagation animation (Figure 9), and bathymetry (Figure 10)

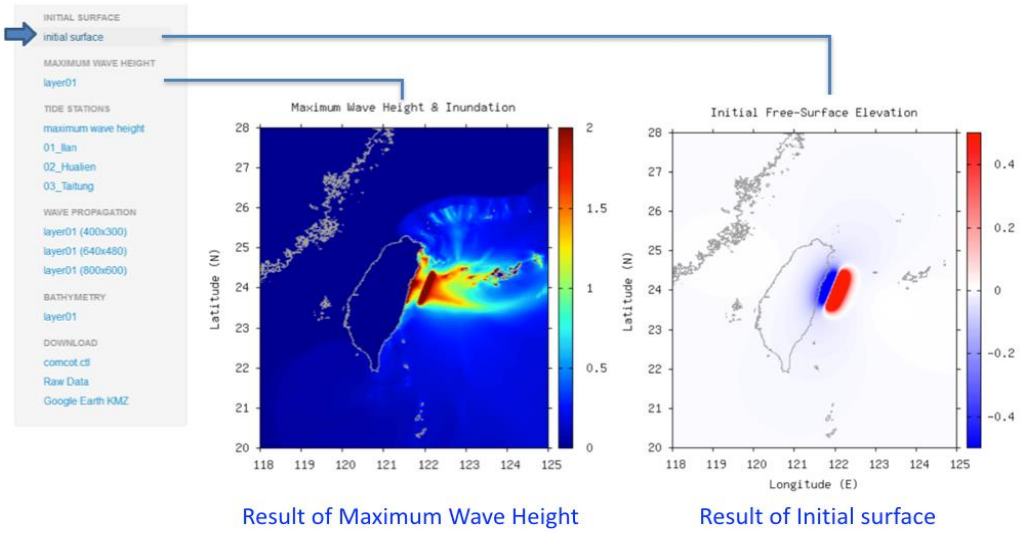

Figure 7 Results of Initial Surface and Maximum Wave Height

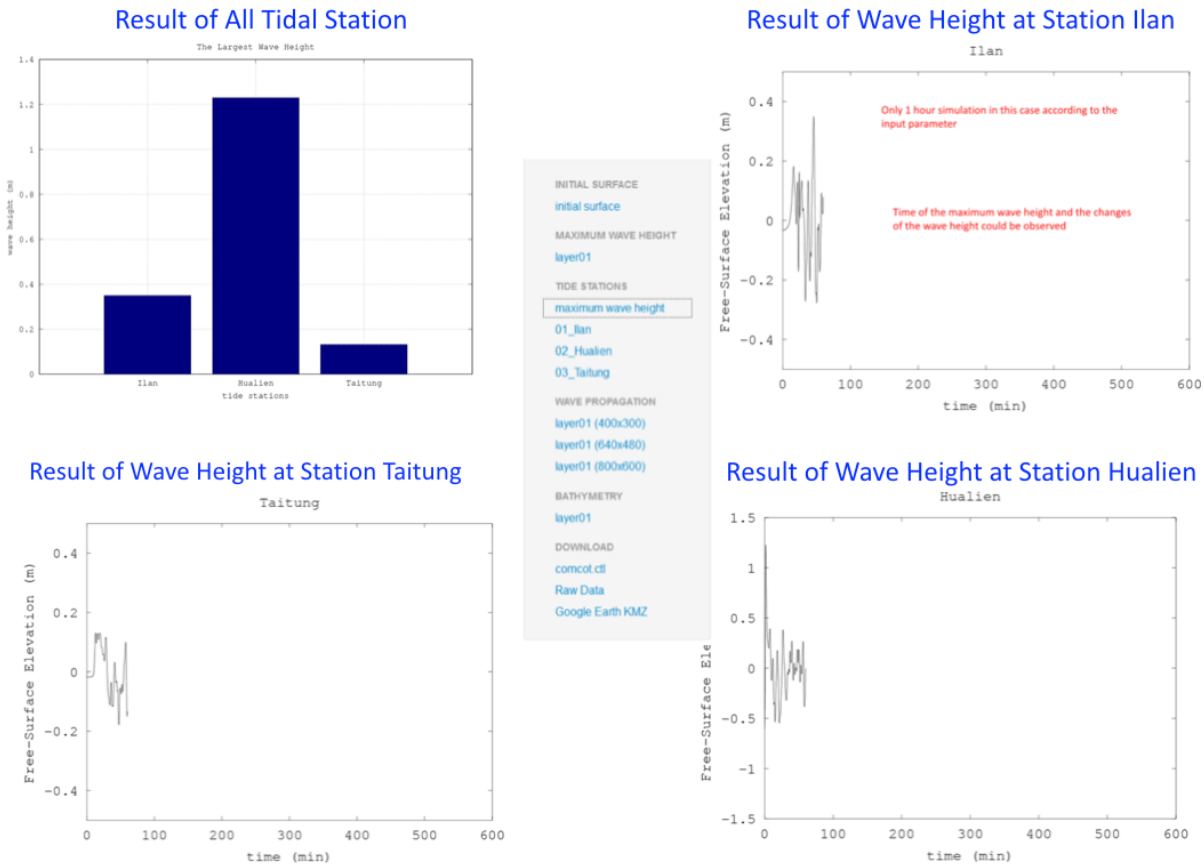

Figure 8 Result of Wave Height at Defined Observation Point (Tide Station)

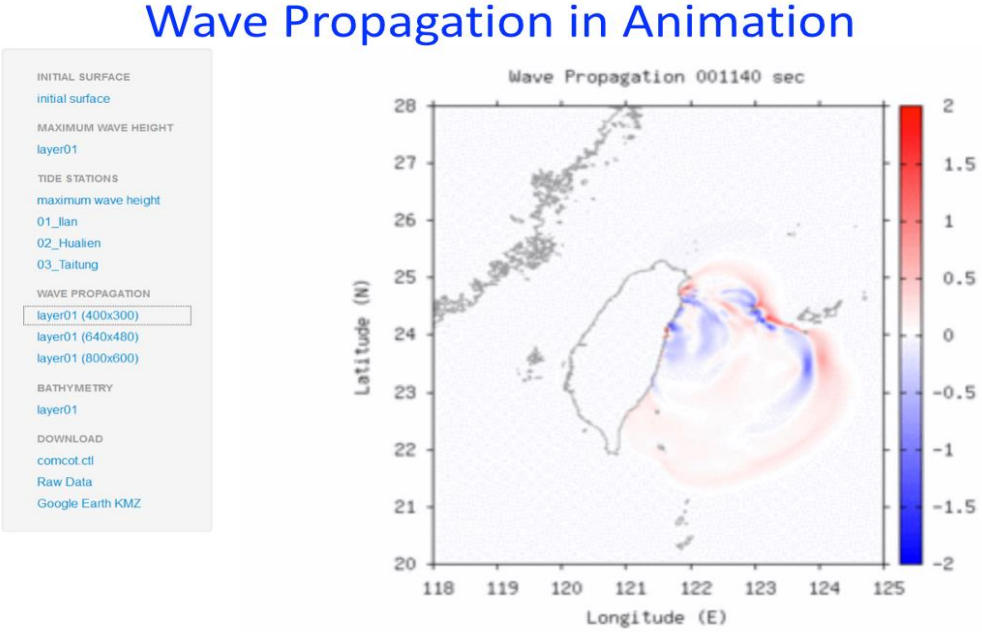

Figure 9 Wave Propagation Animation

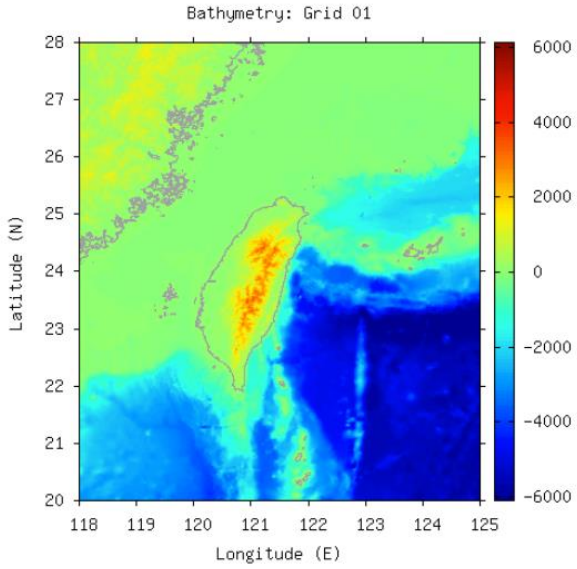

Figure 10 Bathymetric of Simulation Space