Read Me:
Model Name: TC-07_IFREMER_MHK_Test_Case

Objective: Use EFDC+ Explorer (EE) and EFDC+ to simulate the test case described in the conference paper "Verifying marine-hydro-kinetic energy generation simulations using SNL-EFDC.". The model is provided by Sandia National Labs who calibrated turbulence and MHK device parameters against wake data from a flume experiment Myers, 2009. This produced verified simulations of MHK-device energy removal.

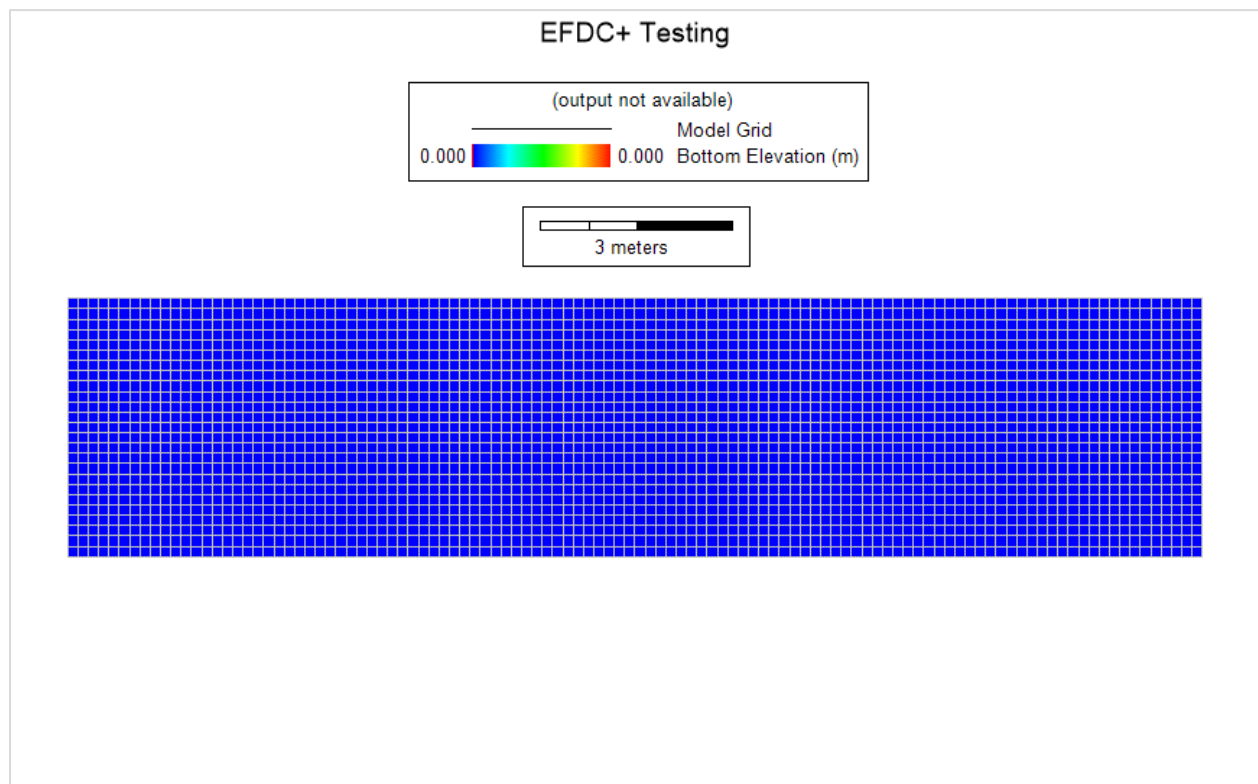**Model Grid:** 2,750 horizontal grid cells and 25 vertical layers.

Figure 1 Model Domain of TC-07_IFREMER_MHK.

Folder Structure:

> **Data:** This folder contains data that can be used with the model. These data can be measured data or output from model or derived from analytical equations.

> **Model:** EFDC model that can be loaded in EE to pre- and post-process.

> **Test_record file:** This file is just a record file that informs which EFDC+ executable was used to run the model.

Modules Activated: hydrodynamics, marine hydrokinetics.

Disclaimer: The model is provided to our users to demonstrate that EFDC_Explorer and EFDC+ can be used to better understand how to build this kind of model. The model is running as expected; however, shouldn't be considered final as the model can be modified / refined to obtain improved results.

Citation for the paper:

James, S. C. et al "Verifying marine-hydro-kinetic energy generation simulations using SNL-EFDC." Conference: Oceans 2011, At Kona, HIOceans 11

Myers, L. and Bahaj, A. S. "Near wake properties of horizontal axis marine current turbines", in *Proceedings of the 8 th European Wave and Tidal Energy Conference*, 2009, pp. 558-565)

Files in Data Folder:

- Roberts_IFREMER_MHK_Europe_2011.pdf

Data sources: The user should look at the papers mentioned above to obtain the data for this study.

Model Results: The velocity magnitude of the model.

IFREMER MHK

2016-10-31 00:00:14
Model Grid
0.370 ▰ 0.895 Velocity Magnitude (Depth Avg.) (m/s)