M3 Wave
Hinsdale Draft Test Plan
Feb 23, 2017

DE-EE-0007345

Wave conditions

Test Plan

Potential sequence:

a. No wec, wave 1, 2, 3, 4
b. Wec1, 0deg, seabed, all waves, ID good scour amount
c. Wec1, elevations at one wave condition
d. Wec1, orientations at one wave
e. Wec2, orientations at one wave
f. Wec3, orientations at one wave
g. Wec1, 1:1 size, two waves

Factor	Levels
Scale	1. 1:5 (1:7?) -- most test 2. 1:2 (1:1?)
Orientation	1. 0 deg 2. 60 deg Alice to look at Oregon climate and decide 3. 90 deg
Elevation	1. seabed 2. zero scour (somewhat less than zero…) 3. in between (1 and 2) 4. seabed + 5cm
Waves	1. portion of the year a 2. portion of the year b 3. portion of the year c 4. portion of the year d add WEP waves? more conditions?
WEC	1. APEX Exact 2. wire mesh version 3. hydrodynamic version 4. no WEC

Test Matrix

Run #	WEC	Scale	Orientation	Elevation	Wave	For Numerical Modeling
1	none	1:5	na	na	1	No
2	none	1:5	na	na	2	No
3	none	1:5	na	na	3	No
4	none	1:5	na	na	4	No
5	APEX	1:5	0	seabed	1	Yes
6	APEX	1:5	0	seabed	2	Yes
7	APEX	1:5	0	seabed	3	Yes
8	APEX	1:5	0	seabed	4	Yes
9	APEX	1:5	0	+5cm	Tbd	Yes
10	APEX	1:5	0	Zero scour -	Tbd	Yes
11	APEX	1:5	0	In between zero scour and +5cm	Tbd	Yes
12	APEX	1:5	90	seabed	Tbd	Yes
13	Wire mesh	1:5	0	seabed	Tbd	Yes
14	Wire mesh	1:5	90	seabed	Tbd	Yes

Run #	WEC	Scale	Orientation	Elevation	Wave	For Numerical Modeling
15	Aerodynamic	1:5	0	seabed	Tbd	Yes
16	Aerodynamic	1:5	90	seabed	Tbd	Yes
17	APEX	1:1	0	seabed	TBD#1	Yes
18	APEX	1:1	0	seabed	TBD#2	Yes

- Preliminary Workflow
  1. Load sand, level, fill tank
  2. Conduct test
     1. Move instrumentation gantry into position, measure sediment.
     2. Move model gantry into position, lower model to target depth.
     3. Run waves
     4. Retract model and model gantry
     5. Move instrumentation gantry into position, measure sediment.
     6. Retract instrumentation gantry, move sediment leveling gantry into position.
     7. Level sediment
  3. Repeat 1-7 for each test point.