

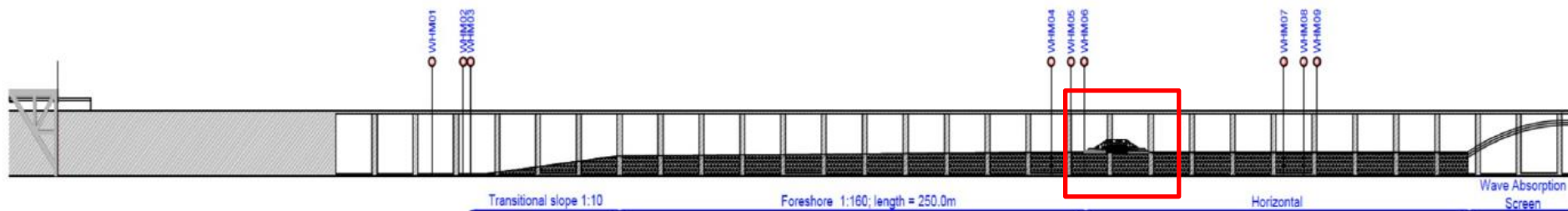
2. Coastal Structures: Wave transmission



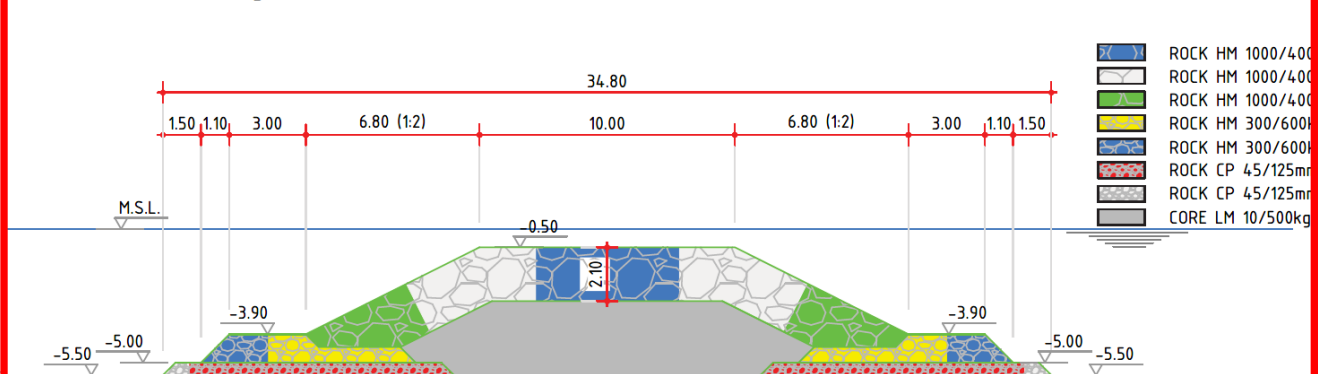
2. Coastal Structures: Wave transmission

1. Schelde goot test data:

1. 1 submerged breakwater geometrie gebruikt
2. Per geometrie 7 condities (varierende waterstand, h_s en T_p)



Cross-section Submerged Breakwater 10m Crest Width

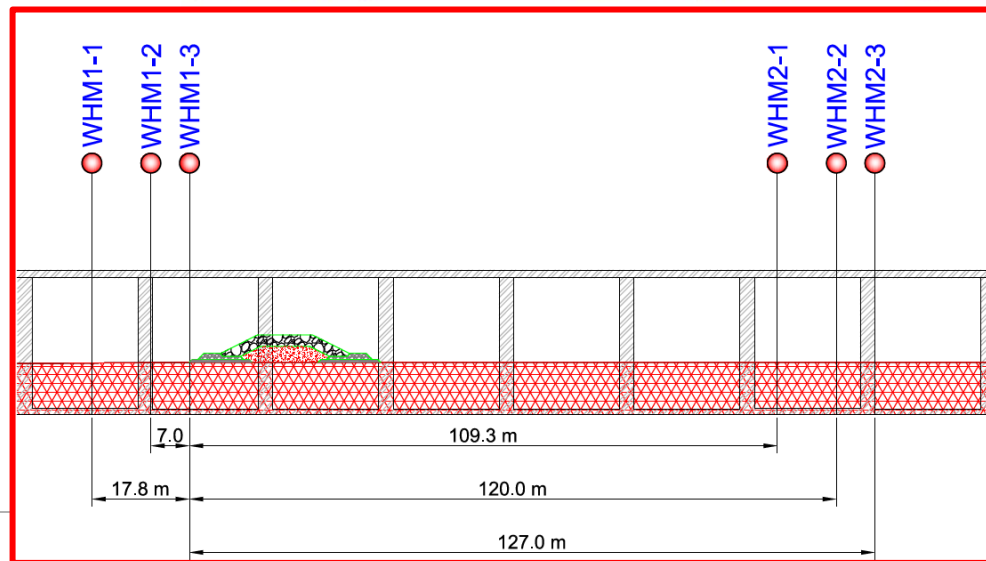


29 November, 2018

2. Coastal Structures: Wave transmission

1. Schelde goot test data:

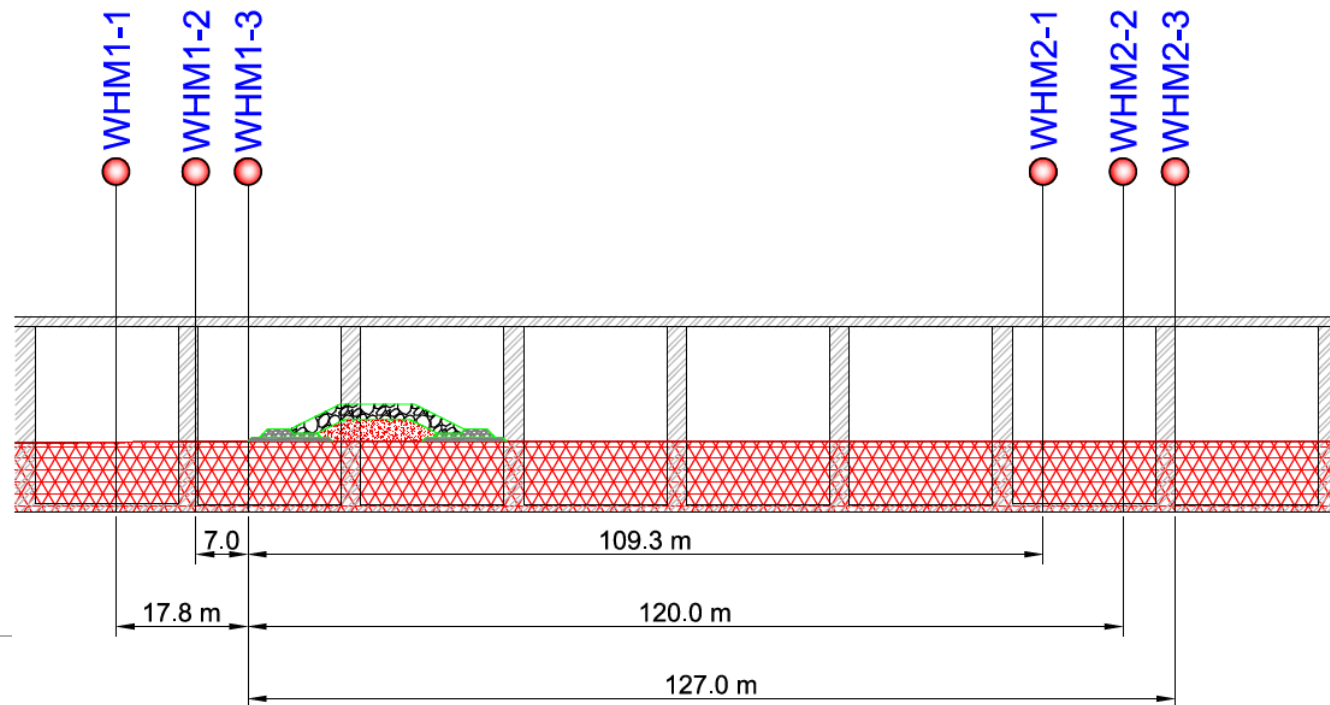
1. 4 verschillende geometrien, 1 gebruikt
2. Per geometrie 7 condities (varierende waterstand, h_s en T_p)
3. Per smo test 6 meetpunten gebruikt



2. Coastal Structures: Wave transmission

1. Criteria 'performance' XB:

1. Wave transmission $C_t (h_{s,trans}/H_{s,toe})$
2. Average water level (left & right side)
3. Spectral parameters H_s & T_p , shape? (left & right side)

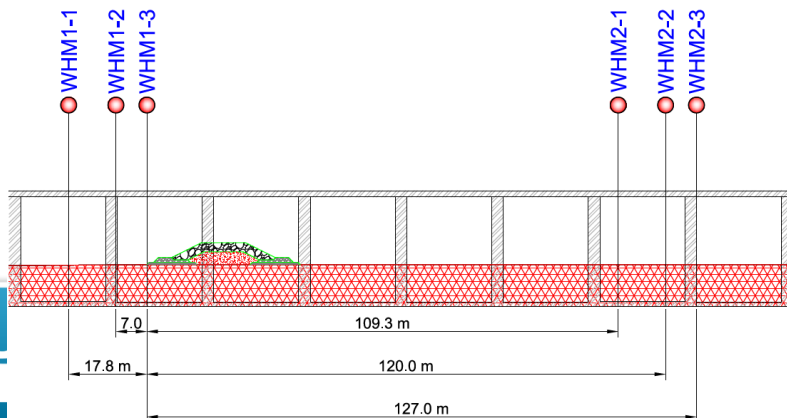
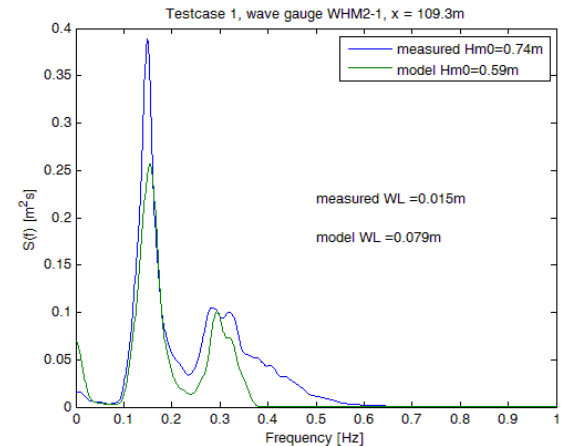
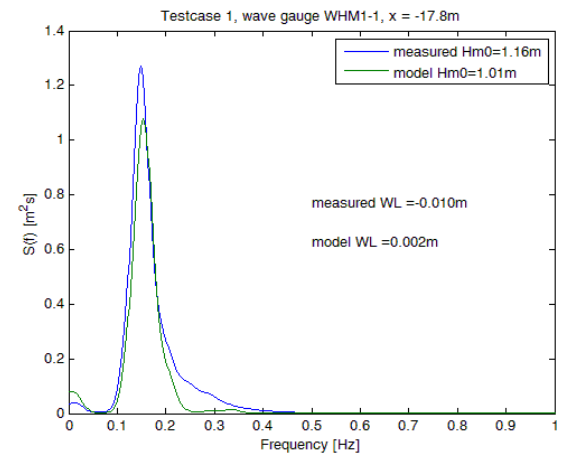


2. Coastal Structures: Wave transmission

1. Schelde goot test data: Geometrie 1, conditie 1

case 1: $H_s=1.2\text{m}$, $T_p=6.2\text{s}$, freeboard: 1.1m

	wl		Hs	
	measured	model	measured	model
loc 1	-0.010	0.002	1.156	1.005
loc 2	-0.015	0.003	1.160	1.030
loc 3	-0.016	-0.005	1.122	0.967
loc 4	0.015	0.079	0.739	0.591
loc 5	0.014	0.079	0.727	0.587
loc 6	0.018	0.079	0.727	0.584
golftransmissie			0.64	0.59

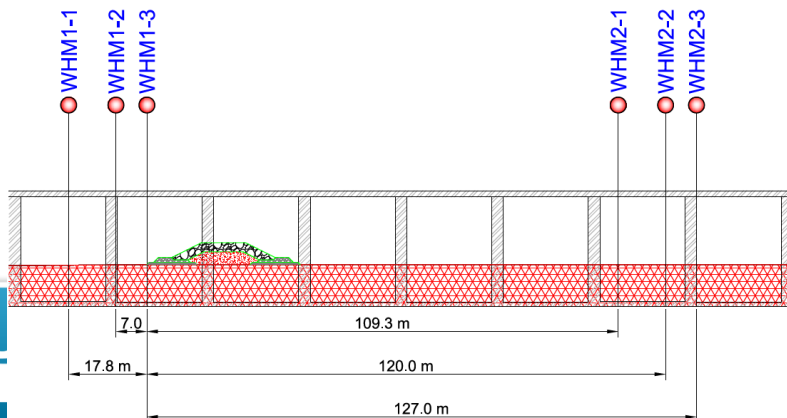
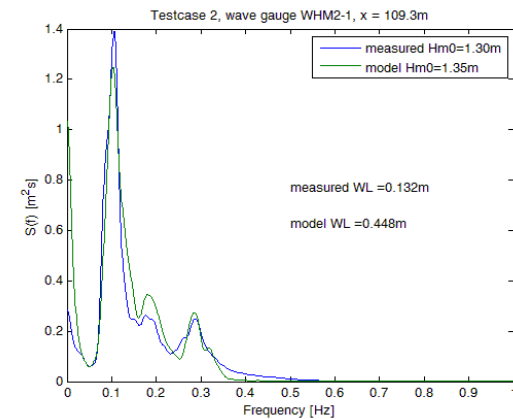
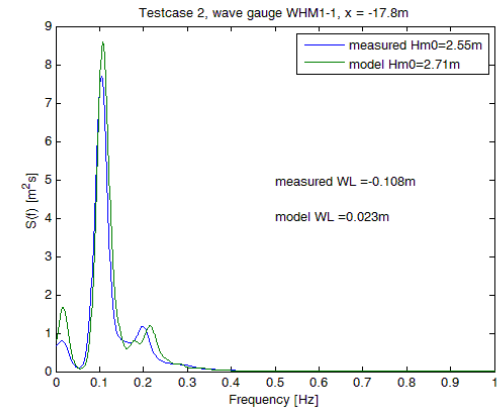


2. Coastal Structures: Wave transmission

1. Schelde goot test data: Geometrie 1, conditie 2

case 2: $H_s=2.3\text{m}$, $T_p=8.8\text{s}$, freeboard: 1.1m

	wl measured		Hs	
	measured	model	measured	model
loc 1	-0.108	0.023	2.55	2.71
loc 2	-0.122	0.015	2.28	2.45
loc 3	-0.128	0.021	2.23	2.54
loc 4	0.132	0.448	1.30	1.35
loc 5	0.129	0.448	1.28	1.35
loc 6	0.135	0.448	1.28	1.35
golfttransmissie			0.51	0.50

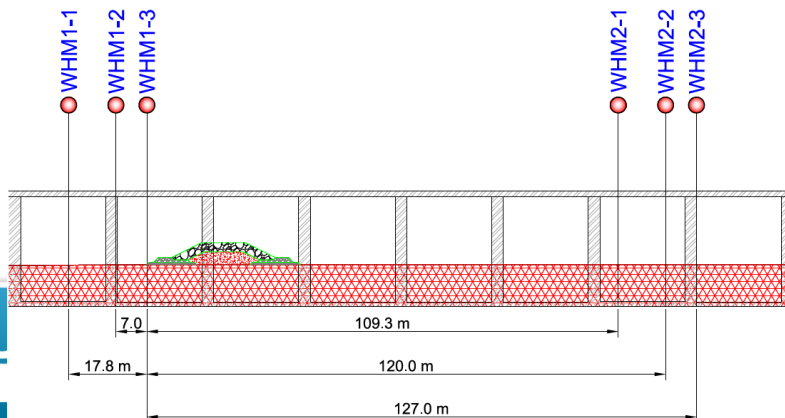
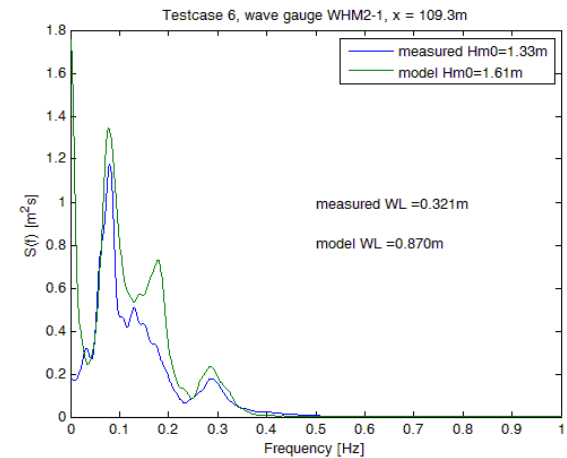
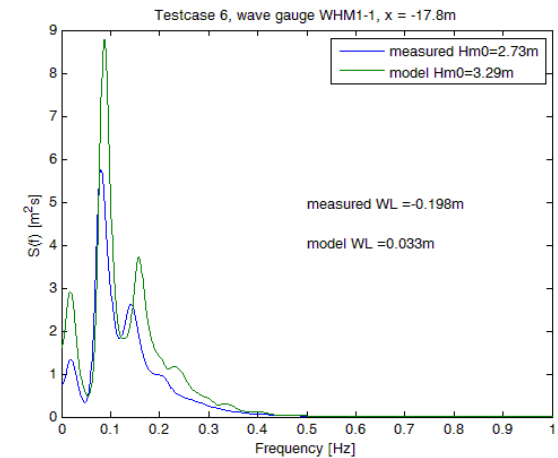


2. Coastal Structures: Wave transmission

1. Schelde goot test data: Geometrie 1, conditie 6 (laagste waterstand)

case 6: $H_s=2.7\text{m}$, $T_p=11.9\text{s}$, freeboard: 0.5m

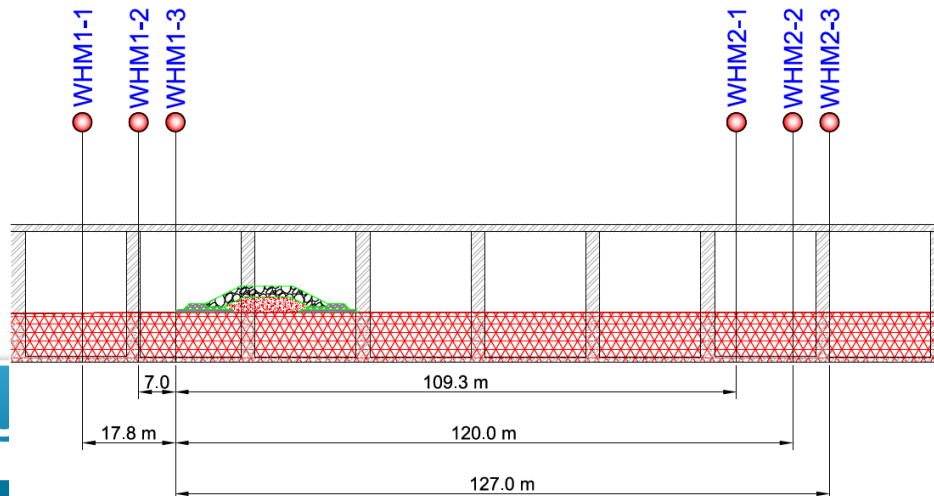
loc	wl measured		Hs	
	measured	model	measured	model
loc 1	-0.198	0.033	2.73	3.29
loc 2	-0.213	0.019	2.48	2.98
loc 3	-0.222	-0.015	2.65	3.52
loc 4	0.321	0.870	1.33	1.61
loc 5	0.320	0.870	1.32	1.61
loc 6	0.322	0.870	1.33	1.60
golftransmissie			0.49	0.49



2. Coastal Structures: Wave transmission

Conclusions

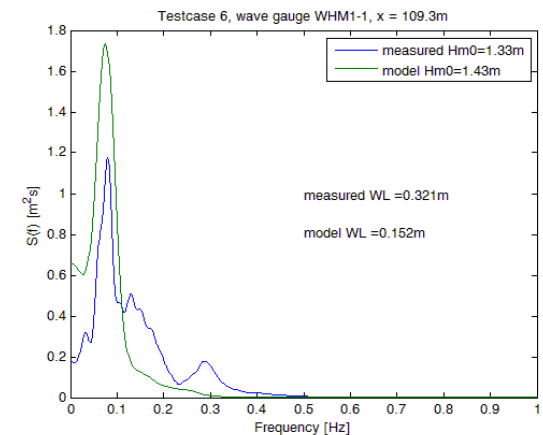
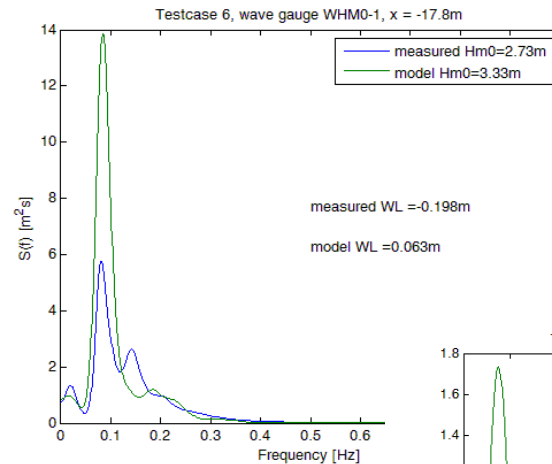
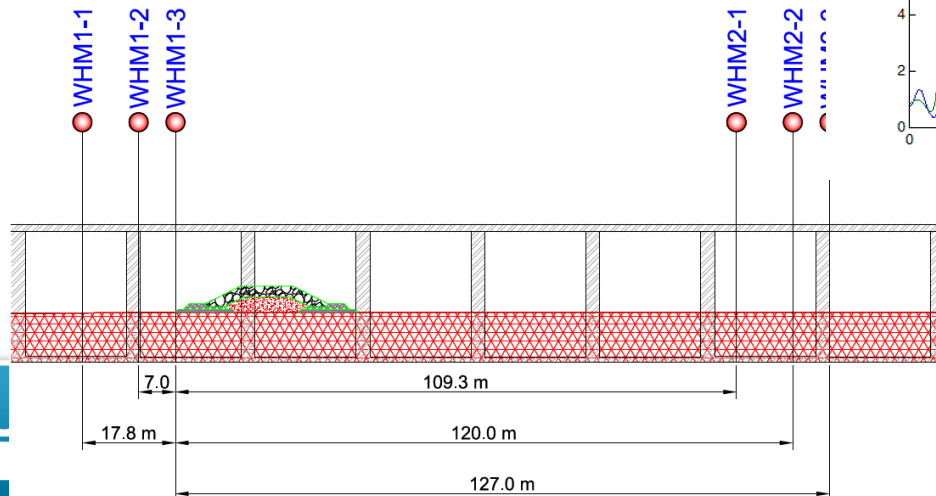
1. Wave transmission C_t by model is quite good, but
2. Water level gradient over BW is overestimated (missing flux through bw)
3. Spectral parameters
 1. Wave height is overestimated (probably due to wave breaking/maxbr)
 2. Spectral shape seems OK



2. Coastal Structures: Wave transmission

Other tests;

1. tweak BW permeability with gwflow module, findings;
 1. Water level gradient (*can be*) solved, but
 2. Bw 'absorbs' wave energy and spectral shape changes



2. Coastal Structures: Wave transmission

Recommendations

1. Proper grid spacing (~ 50 in wavelength)
2. Maxbr (set to lower value, eg $0.35 >$ evaluate default settings)
3. Check with surfbeat transmission & coastal morphology (beach response)
4. Continue testing gw-module

