Client: MAST II - Berm Breakwaters

Project: 3D Model Tests

After $H_o = 3.5$

-30 deg Wave incidence

$\sigma_m = 0.03$
beta = 45 deg.
Accumulation (Rel. to initial)

\[\text{m}^3\]


\[\text{trunk (cm)} \quad \text{head (deg)}\]

\[\text{H0} = 2 \Rightarrow 2.5 \quad 3 \quad 3.5 \quad 4 \quad \text{LS}\]

45 deg.
\( \beta = -30 \text{ deg.} \)

Accumulation (Rel. to Initial)

\[ \text{m}^3 \]

-80 -280 -180 -90 -60 -30 -10 10 20 30 40 50 60 70 80 90 100 110 120

\( \text{trunk (cm)} \)  \( \text{head (deg)} \)

- - - H0 = 2 - 2.5 - 3 - 3.5 - 4 - LS

-30 deg.
$H_0 = 4.0$, $s_m = 0.05$

Accumulation

![Graph showing accumulation with relative angle and various wave directions.](image)

- 0 deg
- 45
- 30
- 15
- -30

![Circular diagram showing wave direction and relative angle.](image)
beta = 0 deg. After H0 = 4.0
Erosion/Deposition (Rel to Initial)
beta = 0 deg. After H0 = 4.0, Head

Erosion / Deposition

Initial

Erosion

Deposition

Total

0 deg.
beta = -30 deg. After H0 = 4.0
Erosion/Deposition (Rel to Initial)

- Erosion  - Deposition  - Total

-30 deg.
\[ \beta = 45 \text{ deg.} \] After \( H_0 = 4.0 \)

Erosion/Deposition (Rel to Initial)

- Erosion
- Deposition
- Total

\[ m^3 \]

-250 -230 -210 -190 -170 -150 -130 -110 -90 -70 -50 -30 -10 10 30 50 70 90 110 130

trunk (cm) head (deg)

45 deg.
'Transport':
Volume who has passed a given section since start of testing
beta = 0 deg.

'Transport' (Accumulated)
beta = 45 deg.
'Transport' (Accumulated)
$\beta = -30$ deg.

'Transport' (Accumulated)
$H_0 = 4.0$, $s_m = 0.05$

'Transport' (Accumulated)
$H_0 = 4.0, sm = 0.05$

"Transport" on Head (Accumulated)

[Graph showing transport on head with different relative angles]
Max. Erosion / Deposition on Head

sm = 0.05

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beta=45  30  15  0  -30

45 deg  0  -30

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Max. Erosion / Deposition on Head

\( \text{beta} = -30 \text{ deg.} \)

\[ \text{m}^3 \]

\[ H0^\circ T0 \]

\[ \text{sm} = 0.05 \quad \times \quad 0.03 \]

\(-30 \text{ deg.}\)
Max. Transport on Head

\( \alpha_m = 0.05 \)

\[ \text{mg} \]

\[ -40 \ -30 \ -20 \ -10 \ 0 \ 10 \ 20 \ 30 \ 40 \ 50 \ 60 \]

\( \text{beta} \)

- \( \text{H0} = 3 \)
- \( \text{H0} = 3.5 \)
- \( \text{H0} = 4 \)
- \( \text{LS(4)} \)

45 deg
0
-30
Max. Transport on Head

$sm = 0.05$

![Graph showing transport on head with various values of $H_0$.]