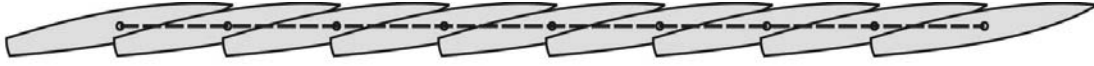


## Test case 3a.3: Static drift



### Conditions

- Towing condition in still water
- Pitch, heave, and roll free
- Without rudders
- With bilge keels

$F_n$ [-]	$R_n$ [-]	$U_c$ [m/s]	$\beta$ [deg]
0.280	$4.643 \times 10^6$	1.531	-10.0

### Items and Remarks

Items	Remarks
Integral variables: Non-dimensionalized coefficients of X-force ( $X'$ ) Y-force ( $Y'$ ) Yaw moment ( $N'$ ) and Uncertainty analysis ( $U_{SN}, U_V, E$ )  Ship motion data: Heave [m] Pitch [m] Roll [deg]	Experimental results are available

- Coordinate system for comparison is fixed at midship on the undisturbed waterplane.

$$F_n = \frac{U_c}{\sqrt{gL_{PP}}}, R_n = \frac{U_c \cdot L_{PP}}{\nu}$$

where,  $U_c$  is towing carriage speed,  $g$  is the gravitational acceleration and  $\nu$  is the kinematic viscosity of water.

- All quantities are non-dimensionalized with water density ( $\rho$ ), ship speed ( $U = \sqrt{u^2 + v^2}$ ), lateral underwater area ( $A_0 = L_{pp} T_m$ ), and the length between perpendiculars ( $L_{pp}$ ).

$$X' = \frac{F_{X_{Hydro}}}{0.5 \rho U^2 A_0}, Y' = \frac{F_{Y_{Hydro}}}{0.5 \rho U^2 A_0}, N' = \frac{M_{Z_{Hydro}}}{0.5 \rho U^2 A_0 L_{pp}}$$