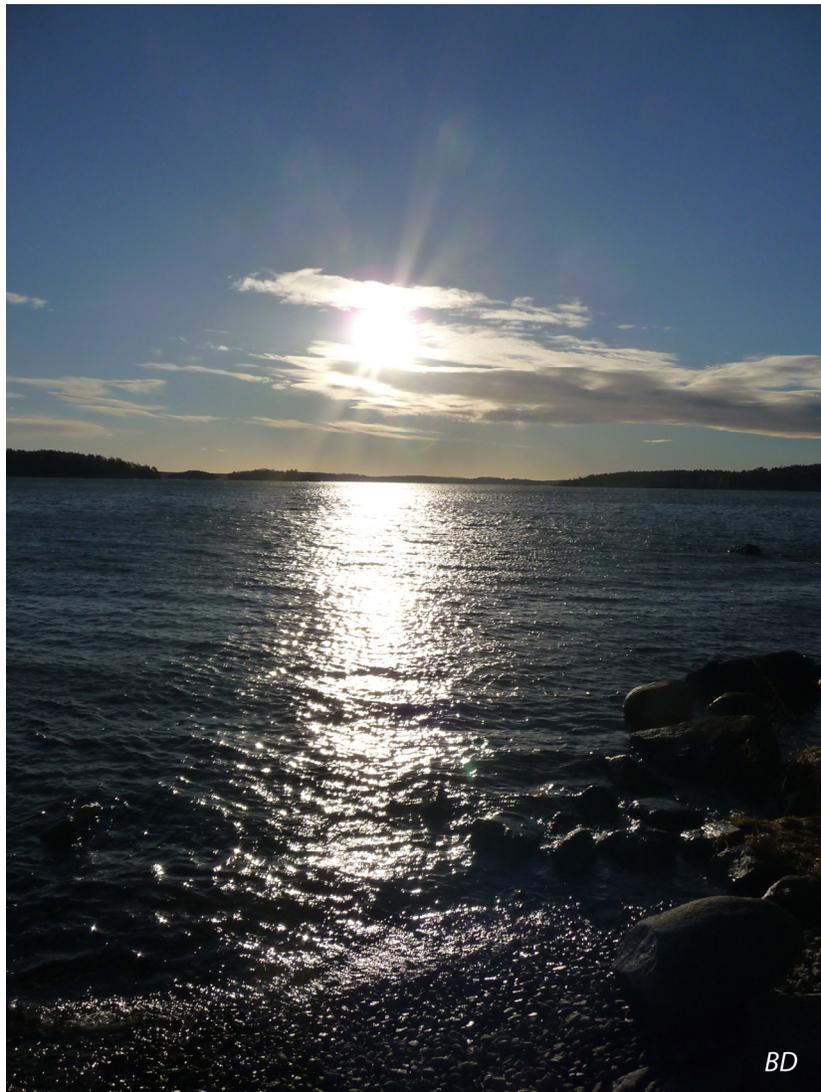


# Hydrodynamic and Transport Characterization of the Baltic Sea 2000-2009

*Bijan Dargahi & Vladimir Cvetkovic*



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## **Hydrodynamic and Transport Characterization of the Baltic Sea 2000-2009**

**The Royal Institute of Technology, School of Architecture and the Built  
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$A_x, A_y, A_z$	momentum dispersion coefficients in xyz directions
$A_v$	turbulent viscosity
$C_{ad}$	advective change in concentration
$C_{di}$	change in particle concentration
$C_n$	concentration
$C_{rs}$	cross-correlation coefficient
$CPI$	current persistency index
$D$	Ekman layer thickness
$D_x, D_y, D_z$	dispersion coefficients in xyz directions
$f$	Coriolis parameter
$G$	Görtler number
$g$	acceleration of gravity
$h$	flow depth
$h_a$	coefficient of ice-to-air heat exchange, $W m^2 \text{ } ^\circ C$
$h_{wi}$	coefficient of water-to-ice heat exchange through the melt layer, $W m^2 C$
$I$	rain intensity
$l$	travel length scale
$L_n$	normalized layer thickness
$L_f$	latent heat of fusion of ice, $J kg^{-1}$
$Q$	flow discharge
$Re$	Reynolds number
$R_r$	Rossby radius of deformation
$S$	salinity in part per thousand
$STD$	standard deviation
$T$	temperature $^\circ C$
$T_i$	ice temperature $^\circ C$
$T_{ei}$	equilibrium temperature of ice-to-air heat exchange $^\circ C$
$T_w$	water temperature below ice $^\circ C$
$T_m$	melt temperature $^\circ C$
$xyz$	streamwise, spanwise, and vertical directions. z is positive downwards
$u, v, w$	velocity components in xyz directions
$\delta$	curvature of the streamline
$\lambda_w$	wave time scale
$\nu$	dynamic viscosity
$\rho$	density of media
$\rho_i$	density of ice, $kg m^{-3}$
$\tau$	shear stress
$\chi$	advection-diffusion ratio
$\omega$	vorticity
$\Omega$	earth rotation

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