

Parameter	Notation	Value	Units
Fluidity parameter	A	75	$\text{MPa}^{-3} \text{a}^{-1}$
Effective damage rate	\tilde{B}	65	$\text{MPa}^{-r} \text{a}^{-1}$
Bed slipperiness	C		$\text{m MPa}^{-1} \text{a}^{-1}$
Initial damage	D_0	0.2	
Critical damage	D_c	0.7	
Gravitational acceleration	\mathbf{g}	9.81	m s^{-2}
Sediment layer thickness	h_s	10	m
Ice thickness	H		m
Water level height	H_w		m
Glen exponent	n	3	
Damage law exponent	r	0.43	
Velocity vector	\mathbf{u}		m a^{-1}
Basal velocity	u_b		m a^{-1}
Calving rate	\bar{u}_c		m d^{-1}
Reference velocity	u_{ref}	$\sim [1.7 \times 10^{-6} \text{m}^{-3} \text{a}^{-1}] H^4$	m a^{-1}
Hayhurst parameter 1	α	0.21	
Hayhurst parameter 2	β	0.63	
Hayhurst stress	χH		MPa
Strain rate tensor	$\dot{\boldsymbol{\epsilon}}$		a^{-1}
Effective strain rate	$\dot{\epsilon}_e$		a^{-1}
Effective viscosity	η		MPa a
Sediment layer viscosity	η_s		MPa a
Finite strain rate parameter	κ_ϵ	5.98×10^{-6}	a^{-1}
Ice density	ρ_i	917	kg m^{-3}
Seawater density	ρ_w	1028	kg m^{-3}
Freshwater density	ρ_w	1000	kg m^{-3}
Cauchy stress tensor	$\boldsymbol{\sigma}$		MPa
Von Mises stress	σ_e		MPa
Maximum principal stress	σ_1		MPa
Mean stress	σ_m		MPa
Deviatoric stress tensor	$\boldsymbol{\sigma}'$		MPa
Reference stress	σ_{ref}	$\rho_i g H \sim [0.009 \text{MPa m}^{-1}] H$	MPa
Damage threshold stress	σ_{th}	0.17	MPa
Basal shear stress	τ_b		MPa
Relative water level	ω		
Relative water level at flotation	ω_f	0.89	