Notation

a_w	water activity
c	mass concentration of water vapor = ρ_1/ρ_0
$\bar{c}$	average c across sample
D	concentration diffusion coefficient for porous medium
D	concentration diffusion coefficient for ice-free porous medium
D_F	Fickian diffusion coefficient
$D_{F,0}$	Fickian diffusion coefficient in ice-free medium
D_K	Knudsen diffusion coefficient
$D_{K,0}$	Knudsen diffusion coefficient in ice-free medium
D'	uncorrected ("raw") diffusion coefficient
$\mathcal{D}_{11}$	coefficient of self-diffusion in free-gas
$\mathcal{D}_{12}$	concentration diffusion coefficient in free-gas
$\mathcal{D}_T$	thermodiffusion coefficient in free-gas
$\mathcal{D}_p$	barodiffusion coefficient in free-gas
d	particle diameter
$\bar{d}$	mean particle diameter
dT_{ice}	error in measured ice temperature
f_c	square root of filling fraction: $\sqrt{\sigma/\sigma_0}$
J_1	mass flux of water vapor
J_2	mass flux of carrier gas
J_{Adv}	advective component of J_1
J_{Diff}	diffusive component of J_1
K_0	Knudsen regime structural parameter
k_B	Boltzmann constant
k	Bulk thermal conductivity
k_i	Interstitial thermal conductivity
k_{i0}	Thermal conductivity of ice-free interstice
k_{ice}	Thermal conductivity of ice
k_0	Ice-free bulk thermal conductivity
k_w	Regolith grain thermal conductivity
k	Boltzmann constant
k_p	barodiffusion ratio
k_T	thermodiffusion ratio

l	molecular hop length
$\langle l_p \rangle$	first moment of pore size distribution
$\langle l_p^2 \rangle$	second moment of pore size distribution
L	dry regolith lag thickness or porous medium length
L_e	pore path length
M_1	molar weight of water
M_2	molar weight of carrier gas
M_c	mass of coarse component in mixture
M_f	mass of fine component in mixture
M_T	total mass of mixture
m_1	molecular mass of water
m_2	molecular mass of carrier gas
n	constriction exponent
n_0	total number density in gas phase, $n_0 = n_1 + n_2$
n_1	number density of water vapor
n_2	number density of carrier gas
n_d	number density of particles in dusty gas model
$p(l)$	pore size distribution
p_0	total pressure, $p_0 = p_1 + p_2$
p_1	partial pressure of water
p_2	partial pressure of carrier gas
p_{ref}	reference pressure
$p_{\mathrm{sv}}^{\mathrm{liq}}$	saturation vapor pressure over liquid water
$p_{\mathrm{sv}}^{\mathrm{ice}}$	saturation vapor pressure over ice
R	universal gas constant or correlation coefficient
RH	relative humidity
r	pore or particle radius
$\bar{r}$	average radius
T	temperature
T_{ice}	temperature of ice surface
T_{air}	temperature of chamber air measured at hygrometer
t	time
V_1	molecular volume of water
V_2	molecular volume of carrier gas
v	void fraction: 1-σ/σ_0
w	vertical velocity of gas
X_f	mass fraction of dust
Z	thickness of ice added or removed
Z_0	initial ice table depth
z	depth
z_{corr}	correction term

α	density of adsorbed phase
$\Delta\rho_1$	water vapor density difference
Δz	sample thickness
κ	intrinsic permeability of a porous medium
λ_1	mean free path of water vapor
μ	dynamic viscosity
$\bar{\nu}_1$	mean velocity of water vapor
$\pi\sigma_{12}^2$	scattering cross section
ρ_0	total mass density, $\rho_0 = \rho_1 + \rho_2$
ρ_1	density of water vapor
$\rho_{1\mathrm{A}}$	density of water vapor at ice surface
$\rho_{1\mathrm{B}}$	density of water vapor at lower sample surface
$\rho_{1\mathrm{C}}$	density of water vapor at upper sample surface
$\rho_{1\mathrm{D}}$	density of water vapor at hygrometer
ρ_2	density of carrier gas
ρ_{ice}	density of ice
$\rho_{c,\mathrm{bulk}}$	density of bulk coarse particles
$\rho_{c,\mathrm{true}}$	density of individual coarse particles
$\rho_{f,\mathrm{bulk}}$	density of bulk fines
$\rho_{f,\mathrm{true}}$	density of individual fines particles
σ	ice density relative to free space
σ_1	molecular radius of water
σ_2	molecular radius of carrier gas
τ	tortuosity factor
ϕ	porosity
ϕ_{mix}	porosity of mixture
Ω_{12}	collision integral