```
// Primary Set-up & Givens:
// Cooling Load :
Q_c_dot = 2e3  [W]
// Operating hours:
time_dc = 11 [h]
// Cooling load for 11 hours, working hours from 7 AM to 6 PM, assuming the system is idle in the rest of the day
Q_c = Q_c_dot *time_dc
// the efficinecy of the storage is typically= 0.9
eta_st = 0.9
// the required storage capacity :
Q_st = Q_c / eta_st
// Ambient and operating inputs:
// For AHU ( Air Handling unit ):
// Comfort Temp
T_2 = 23 [C]
// The max  ambient dry bulb Temp in the hottest day in summer for Melbourne, Fl:
T_1  = 32.7 [C]
// the mass flow rate of the AHU:
T_avg_AHU =( T_2+T_1)/ 2
// Capacity of air at T__avg_AHU , specific enthalpy h_g_1 of water vapor at T_1 , h_g_2 at T_2, omega absolute humidity at T_1 and T_2

cp_air_AHU = 1.005e3 [J/kg-C]
P_amb = 100e3 [Pa]

relative_humidity_1 = 0.7   // ambient relative humidity ( measured by weather station)
relative_humidity_2=0.55   //  needed relative hunidity inside the building

P_sat_1 =   4.951e3[Pa]       //P_sat(Water,T=T_1) water vapor saturation pressure at ambient dry bulb
P_sat_2 =   2.811e3[Pa]       // P_sat(Water, T=T_2)  water vapor saturation pressure at comfort T

omega_1 = (0.066 *P_sat_1 *  relative_humidity_1)/ ((P_amb)-  (P_sat_1 *  relative_humidity_1)       )
omega_2 = (0.066 *P_sat_2*  relative_humidity_2)/ ((P_amb)-  (P_sat_2*  relative_humidity_2)      )

h_g1=  2560e3  [J/kg]            //enthalpy(Water,T=T_1, x=1)
h_g2=  2543e3 [J/kg]             // Enthalpy (Water, T= T_2 , x=1)

delta_h_AHU = cp_air_AHU * ( T_1- T_2) + (   ( h_g1*omega_1)-  (h_g2*omega_2)   )
 //m_dot_air =(Q_c_dot )/ ( delta_h_AHU) // where delta_h_AHU = h_1-h_2
// so the mass flow rate Required for AHU is 0.15 kg/s

// the Discharing Cycle in which water with 20 % Glycol is used as heat transfer fluid (HTF) for the heat storage tank
// for refrigeration systems, Typical Temp for  T_HTF_out which the temp of the HTF discharged from PCM-TES into AHU is ( 3 to 5 C)
// for refrigeration systems, Typical Temp for  T_HTF_in which the temp of the HTF going into PCM-TES from AHU is (11 to 13 C)
//  We  fix T_HTF_out and T_HTF_in  at the average of their typical ranges, ususally those values are optimized for annual operation cycle
// The melting temp of the choosen PCM must be greater than the freezing point of the HTF( GLYC)
T_fp_HTF=     -0.07306[C]             // freezingpt(GLYC,C=0.2)  the heat transfer flluid  20 % Glycol
cp_HTF = 4191 [J/kg*C]                  //cp(GLYC,T=T_HTF_avg,C=0.2)
T_HTF_out =  (3+5)/2
T_HTF_in  = (11+13)/2
T_HTF_avg = ( T_HTF_out+ T_HTF_in )/2
k_HTF=0.5759 [W/m-C]
Pr_HTF =        10.17//prandtl(GLYC,T=T_HTF_avg,C=0.2)
mu_HTF=0.001398[Pa-s]
rho_HTF =    1000         //Density(GLYC,T=T_HTF_avg,C=0.2)
// First: Ice
T_melting_ice = 0 [C]  // to be adjusted for another pcm
h_l_ice = 336e3 [J/kg]// to be adjusted for another pcm
rho_ice = 917 [kg/m^3]// to be adjusted for another pcm
k_ice = 2.22 [W/m-C]// to be adjusted for another pcm
```

```
//m_dot_HTF = 0.1 [kg/s] // the mass flow rate of heat taransfer fluid will varied for optimal studies
 Q_st_J = 87984e3 [J]   // Q_st * 3600
V_ice = Q_st_J /(rho_ice *h_l_ice )  //
A_st = 6* pi# *(V_ice /(2*pi# )  )^(2/3)  // It should be mentioned that the shape of ice storage tank wasassumed to be cylindrical (with diameter equal to the height) inorder to minimize the heat leakage rate
R_insulated = 1980e-3 [m^2*C/W]
t_dc = 11 [h]
t_ch= 13[h]
t_dc = Q_leakage_dc *R_insulated/ (( T_1- T_HTF_out)*A_st)
t_ch = Q_leakage_ch  *R_insulated/ (( T_1- T_melting_ice)*A_st)

//Design of heat the Heat Exchanger useg effectivness_NTU method -Analisys-Based Design
//epsilon = (T_HTF_in - T_HTF_out)/(T_HTF_in-T_melting_ice)
//epsilon = 1- exp(-NTU_ice)
 //epsilon = 1-exp(-0.0199*(A_ice/m_dot_HTF))

N = 150// 20, 50, 150
D_o =  6.4e-3    [m]      // Typical range , from 6.40 mm to 101.6 mm
tube_t =      9.2e-4     [m]//thickness , from 0.91 mm to 1.63 mm
D_i = D_o-tube_t
p_pitch=  max( (1.25e-3)*D_o ,(D_o + 6.4e-3[m]) ) //ch, ( aka r_max ), assume square pitch arrangement
k_wall =  398 [W/m-C]          // copper
 L_ice_i =0.1  // I'm using the iterative method, initiating a value of L_ice and then resolve everthing with the correct value

R_t_ice =  R_HTF + R_wall+ R_ice
R_HTF = 1/ ( D_i *pi#*h_f_ice*L_ice_i )
R_wall = ln(D_o/D_i)/ (2*pi#*k_wall*L_ice_i)
 R_ice = (    ln(  ( pc_f*(  (p_pitch*0.5)^(2)  -   (D_o*0.5)^(2)  ) +  (D_o*0.5 )^(2)     )^(0.5)              /     (D_o*0.5)            )       )
         /(  2*pi#*k_ice*L_ice_i     )         // pc_f is the The phase change fraction  for a tube rounded by a cylindrical volume of PCM
 pc_f =   0.90

A_cross_tube = 0.25*pi#*(D_i^2)*N
Re_f = m_dot_HTF*D_i/ (A_cross_tube *mu_HTF)
h_f_ice  = Nusselt_f_ice *k_HTF / D_i
Nusselt_f_ice = 3.66 + (0.0668 * (D_i / L_ice_i) * Pr_HTF * Re_f) / (1 + 0.04 * ((D_i / L_ice_i) * Re_f * Pr_HTF)^(2/3))
U= 1/( R_t_ice*D_o*pi#*L_ice_i)



Delta_T_1 = T_HTF_in - T_melting_ice ;
Delta_T_2 = T_HTF_out - T_melting_ice;
LMTD = (Delta_T_1- Delta_T_2)/ ln(Delta_T_1/Delta_T_2 );
Q_st_dot = Q_st/ time_dc
Q_st_dot =  U* D_o*pi#*L_ice_new *N*LMTD
A_ice_i= N*pi#*D_o *L_ice_new



// using L_ice_new

R_t_ice_new=  R_HTF_new + R_wall_new+ R_ice_new
R_HTF_new = 1/ ( D_i *pi#*h_f_ice*L_ice_new  )
R_wall_new = ln(D_o/D_i)/ (2*pi#*k_wall*L_ice_new )
 R_ice_new = (    ln(  ( pc_f*(  (p_pitch*0.5)^(2)  -   (D_o*0.5)^(2)  ) +  (D_o*0.5 )^(2)     )^(0.5)              /     (D_o*0.5)            )
    )             /(  2*pi#*k_ice*L_ice_new     )         // pc_f is the The phase change fraction  for a tube rounded by a cylindrical volume of PCM



h_f_ice_new  = Nusselt_f_ice_new *k_HTF / D_i
Nusselt_f_ice_new= 3.66 + (0.0668 * (D_i / L_ice_new ) * Pr_HTF * Re_f) / (1 + 0.04 * ((D_i /L_ice_new ) * Re_f * Pr_HTF)^(2/3))
U_new= 1/( R_t_ice_new*D_o*pi#*L_ice_new)
```

Q_st_dot = U_new* D_o*pi#*L_ice *N*LMTD
A_ice= N*pi#*D_o *L_ice

L_plus_ice = L_ice/ (D_i*Re_f)
f_avg_ice = (4/Re_f)* ((3.44/sqrt(L_plus_ice)) + (((1.25/(4*L_plus_ice))+(64/4)- (3.44/sqrt(L_plus_ice)))/(1+(0.00021/L_plus_ice^2))))

//f_fd = 1/ (0.79*ln(Re_f)-1.64)^2
//f= f_fd*(1+(D_i/L_ice)^0.7)
P_drop = f_avg_ice*(L_ice/D_i)*(m_dot_HTF^(2))/(2*rho_HTF*A_cross_tube^(2))
C_B =16648.3 *A_ice^(0.6123)

// second : pcm_1 ; Potassium Flouride

T_melting_pcm_1 = 5 [C] // to be adjusted for another pcm
h_l_pcm_1 = 231e3 [J/kg]// to be adjusted for another pcm
rho_pcm_1 = 1445[kg/m^3]// to be adjusted for another pcm
k_pcm_1 = 0.584[W/m-C]// to be adjusted for another pcm

V_pcm_1 = Q_st_J /(rho_pcm_1 *h_l_pcm_1) //
A_st_pcm_1 = 6* pi# *(V_pcm_1 /(2*pi#))^(2/3) // It should be mentioned that the shape of ice storage tank wasassumed to be cylindrical (with diameter equal to the height) inorder to minimize the heat leakage rate

t_dc = Q_leakage_dc_pcm_1 *R_insulated/ ((T_1- T_HTF_out_pcm_1)*A_st_pcm_1)
t_ch = Q_leakage_ch_pcm_1 *R_insulated/ ((T_1- T_melting_pcm_1)*A_st_pcm_1)

L_pcm_1_i =0.1 // I'm using the iterative method, initiating a value of L_ice and then resolve everthing with the correct value

R_t_pcm_1 = R_HTF_pcm_1 + R_wall_pcm_1+ R_pcm_1
R_HTF_pcm_1 = 1/ (D_i *pi#*h_f_pcm_1*L_pcm_1_i)
R_wall_pcm_1 = ln(D_o/D_i)/ (2*pi#*k_wall*L_pcm_1_i)
R_pcm_1 = (ln((pc_f*((p_pitch*0.5)^(2) - (D_o*0.5)^(2)) + (D_o*0.5)^(2))^(0.5) / (D_o*0.5)) /(2*pi#*k_pcm_1*L_pcm_1_i) // pc_f is the The phase change fraction for a tube rounded by a cylindrical volume of PCM

h_f_pcm_1 = Nusselt_f_pcm_1 *k_HTF / D_i
Nusselt_f_pcm_1 = 3.66 + (0.0668 * (D_i / L_pcm_1_i) * Pr_HTF * Re_f) / (1 + 0.04 * ((D_i / L_pcm_1_i) * Re_f * Pr_HTF)^(2/3))
U_pcm_1= 1/(R_t_pcm_1*D_o*pi#*L_pcm_1_i)

T_HTF_in_pcm_1= (18+23)/2
T_HTF_out_pcm_1 = (10+15)/2

Delta_T_1_pcm_1 = (T_HTF_in_pcm_1 -T_melting_pcm_1) ;
Delta_T_2_pcm_1 = (T_HTF_out_pcm_1- T_melting_pcm_1);
LMTD_pcm_1 = (Delta_T_1_pcm_1- Delta_T_2_pcm_1)/ ln(Delta_T_1_pcm_1/Delta_T_2_pcm_1);

Q_st_dot = U_pcm_1* D_o*pi#*L_pcm_1_new *N*LMTD_pcm_1
A_pcm_1_i= N*pi#*D_o *L_pcm_1_new

// using L_pcm_1_new

R_t_pcm_1_new= R_HTF_pcm_1_new + R_wall_pcm_1_new+ R_pcm_1_new
R_HTF_pcm_1_new = 1/ (D_i *pi#*h_f_pcm_1*L_pcm_1_new)
R_wall_pcm_1_new = ln(D_o/D_i)/ (2*pi#*k_wall*L_pcm_1_new)
R_pcm_1_new = (ln((pc_f*((p_pitch*0.5)^(2) - (D_o*0.5)^(2)) + (D_o*0.5)^(2))^(0.5) / (D_o*0.5))) /(2*pi#*k_pcm_1*L_pcm_1_new) // pc_f is the The phase change fraction for a tube rounded by a cylindrical volume of PCM

h_f_i_pcm_1_new = Nusselt_f_pcm_1_new *k_HTF / D_i
Nusselt_f_pcm_1_new= 3.66 + (0.0668 * (D_i / L_pcm_1_new) * Pr_HTF * Re_f) / (1 + 0.04 * ((D_i /L_pcm_1_new) * Re_f * Pr_HTF)^(2/3))
U_pcm_1_new= 1/(R_t_ice_new*D_o*pi#*L_ice_new)

Q_st_dot = U_pcm_1_new* D_o*pi#*L_pcm_1 *N*LMTD_pcm_1
A_pcm_1= N*pi#*D_o *L_pcm_1

L_plus_pcm_1 = L_pcm_1/ (D_i*Re_f)
f_avg_pcm_1 = (4/Re_f)* ((3.44/sqrt(L_plus_pcm_1)) + (((1.25/(4*L_plus_pcm_1))+(64/4)- (3.44/sqrt(L_plus_pcm_1)))/(1+(0.00021/L_plus_pcm_1^2))))

//f_fd_pcm_1 = 1/ (0.79*ln(Re_f)-1.64)^2
//f_pcm_1= f_fd_pcm_1*(1+(D_i/L_pcm_1)^0.7)
P_drop_pcm_1 = f_avg_pcm_1*(L_pcm_1/D_i)*(m_dot_HTF^(2))/(2*rho_HTF*A_cross_tube^(2))
C_B_pcm_1 =16648.3 *A_pcm_1^(0.6123)

$\dot{Q}_c = 2000$ [W]

$time_{dc} = 11$ [h]

$Q_c = \dot{Q}_c \cdot time_{dc}$

$\eta_{st} = 0.9$

$Q_{st} = \frac{Q_c}{\eta_{st}}$

$T_2 = 23$ [C]

$T_1 = 32.7$ [C]

$T_{avg,AHU} = \frac{T_2 + T_1}{2}$

$cp_{air,AHU} = 1005$ [J/kg-C]

$P_{amb} = 100000$ [Pa]

$relative_{humidity,1} = 0.7$

$relative_{humidity,2} = 0.55$

$P_{sat,1} = 4951$ [Pa]

$P_{sat,2} = 2811$ [Pa]

$$\omega_1 = \frac{0.066 \cdot P_{sat,1} \cdot relative_{humidity,1}}{P_{amb} - P_{sat,1} \cdot relative_{humidity,1}}$$

$$\omega_2 = \frac{0.066 \cdot P_{sat,2} \cdot relative_{humidity,2}}{P_{amb} - P_{sat,2} \cdot relative_{humidity,2}}$$

$h_{g1} = 2.56 \times 10^6$ [J/kg]

$h_{g2} = 2.543 \times 10^6$ [J/kg]

$\delta_{h,AHU} = cp_{air,AHU} \cdot (T_1 - T_2) + h_{g1} \cdot \omega_1 - h_{g2} \cdot \omega_2$

$T_{fp,HTF} = -0.07306$ [C]

$cp_{HTF} = 4191$ [J/kg*C]

$$T_{HTF,out} = \frac{3 + 5}{2}$$

$$T_{HTF,in} = \frac{11 + 13}{2}$$

$$T_{HTF,avg} = \frac{T_{HTF,out} + T_{HTF,in}}{2}$$

$k_{HTF} = 0.5759$ [W/m-C]

$Pr_{HTF} = 10.17$

$\mu_{HTF} = 0.001398$ [Pa-s]

$\rho_{HTF} = 1000$

$T_{melting,ice} = 0$ [C]

$h_{l,ice} = 336000$ [J/kg]

$\rho_{ice} = 917$ [kg/m^3]

$k_{ice} = 2.22$ [W/m-C]

$Q_{st,J} = 8.7984 \times 10^7$ [J]

$$V_{ice} = \frac{Q_{st,J}}{\rho_{ice} \cdot h_{l,ice}}$$

$$A_{st} = 6 \cdot 3.142 \cdot \left[\frac{V_{ice}}{2 \cdot 3.142}\right]^{(2/3)}$$

$R_{insulated} = 1.98$ [m^2*C/W]

$t_{dc} = 11$ [h]

$t_{ch} = 13$ [h]

$$t_{dc} = Q_{leakage,dc} \cdot \frac{R_{insulated}}{(T_1 - T_{HTF,out}) \cdot A_{st}}$$

$$t_{ch} = Q_{leakage,ch} \cdot \frac{R_{insulated}}{(T_1 - T_{melting,ice}) \cdot A_{st}}$$

$N = 150$

$D_o = 0.0064$ [m]

$tube_t = 0.00092$ [m]

$D_i = D_o - tube_t$

$p_{pitch} = \mathbf{Max}(0.00125 \cdot D_o, D_o + 0.0064$ [m]$)$

$k_{wall} = 398$ [W/m-C]

$L_{ice,i} = 0.1$

$R_{t,ice} = R_{HTF} + R_{wall} + R_{ice}$

$$R_{HTF} = \frac{1}{D_i \cdot 3.142 \cdot h_{f,ice} \cdot L_{ice,i}}$$

$$R_{wall} = \frac{\ln\left[\frac{D_o}{D_i}\right]}{2 \cdot 3.142 \cdot k_{wall} \cdot L_{ice,i}}$$

$$R_{ice} = \frac{\ln\left[\frac{(pc_f \cdot ((p_{pitch} \cdot 0.5)^2 - (D_o \cdot 0.5)^2) + (D_o \cdot 0.5)^2)^{0.5}}{D_o \cdot 0.5}\right]}{2 \cdot 3.142 \cdot k_{ice} \cdot L_{ice,i}}$$

$pc_f = 0.9$

$A_{cross,tube} = 0.25 \cdot 3.142 \cdot D_i^2 \cdot N$

$$Re_f = \dot{m}_{HTF} \cdot \frac{D_i}{A_{cross,tube} \cdot \mu_{HTF}}$$

$$h_{f,ice} = Nusselt_{f,ice} \cdot \frac{k_{HTF}}{D_i}$$

$$Nusselt_{f,ice} = 3.66 + \frac{0.0668 \cdot \frac{D_i}{L_{ice,i}} \cdot Pr_{HTF} \cdot Re_f}{1 + 0.04 \cdot \left[\frac{D_i}{L_{ice,i}} \cdot Re_f \cdot Pr_{HTF}\right]^{(2/3)}}$$

$$U = \frac{1}{R_{t,ice} \cdot D_o \cdot 3.142 \cdot L_{ice,i}}$$

$$\delta_{T,1} = T_{HTF,in} - T_{melting,ice}$$

$$\delta_{T,2} = T_{HTF,out} - T_{melting,ice}$$

$$LMTD = \frac{\delta_{T,1} - \delta_{T,2}}{\ln\left[\frac{\delta_{T,1}}{\delta_{T,2}}\right]}$$

$$Q_{st} = \frac{Q_{st}}{time_{dc}}$$

$$Q_{st} = U \cdot D_o \cdot 3.142 \cdot L_{ice,new} \cdot N \cdot LMTD$$

$$A_{ice,i} = N \cdot 3.142 \cdot D_o \cdot L_{ice,new}$$

$$R_{t,ice,new} = R_{HTF,new} + R_{wall,new} + R_{ice,new}$$

$$R_{HTF,new} = \frac{1}{D_i \cdot 3.142 \cdot h_{f,ice} \cdot L_{ice,new}}$$

$$R_{wall,new} = \frac{\ln\left[\frac{D_o}{D_i}\right]}{2 \cdot 3.142 \cdot k_{wall} \cdot L_{ice,new}}$$

$$R_{ice,new} = \frac{\ln\left[\frac{(pc_f \cdot ((p_{pitch} \cdot 0.5)^2 - (D_o \cdot 0.5)^2) + (D_o \cdot 0.5)^2)^{0.5}}{D_o \cdot 0.5}\right]}{2 \cdot 3.142 \cdot k_{ice} \cdot L_{ice,new}}$$

$$h_{f,ice,new} = Nusselt_{f,ice,new} \cdot \frac{k_{HTF}}{D_i}$$

$$Nusselt_{f,ice,new} = 3.66 + \frac{0.0668 \cdot \frac{D_i}{L_{ice,new}} \cdot Pr_{HTF} \cdot Re_f}{1 + 0.04 \cdot \left[\frac{D_i}{L_{ice,new}} \cdot Re_f \cdot Pr_{HTF}\right]^{(2/3)}}$$

$$U_{new} = \frac{1}{R_{t,ice,new} \cdot D_o \cdot 3.142 \cdot L_{ice,new}}$$

$$Q_{st} = U_{new} \cdot D_o \cdot 3.142 \cdot L_{ice} \cdot N \cdot LMTD$$

$$A_{ice} = N \cdot 3.142 \cdot D_o \cdot L_{ice}$$

$$L_{plus,ice} = \frac{L_{ice}}{D_i \cdot Re_f}$$

$$f_{avg,ice} = \frac{4}{Re_f} \cdot \left[\frac{3.44}{\sqrt{L_{plus,ice}}} + \frac{\frac{1.25}{4 \cdot L_{plus,ice}} + \frac{64}{4} - \frac{3.44}{\sqrt{L_{plus,ice}}}}{1 + \frac{0.00021}{L_{plus,ice}^2}}\right]$$

$$P_{drop} = f_{avg,ice} \cdot \frac{L_{ice}}{D_i} \cdot \frac{\dot{m}_{HTF}^2}{2 \cdot \rho_{HTF} \cdot A_{cross,tube}^2}$$

$$C_B = 16648.3 \cdot A_{ice}^{0.6123}$$

$$T_{melting,pcm,1} = 5 \quad [C]$$

$$h_{l,pcm,1} = 231000 \quad [J/kg]$$

$$\rho_{pcm,1} = 1445 \quad [kg/m^3]$$

$$k_{pcm,1} = 0.584 \quad [W/m\text{-}C]$$

$$V_{pcm,1} = \frac{Q_{st,J}}{\rho_{pcm,1} \cdot h_{l,pcm,1}}$$

$$A_{st,pcm,1} = 6 \cdot 3.142 \cdot \left[\frac{V_{pcm,1}}{2 \cdot 3.142}\right]^{(2/3)}$$

$$t_{dc} = Q_{leakage,dc,pcm,1} \cdot \frac{R_{insulated}}{(T_1 - T_{HTF,out,pcm,1}) \cdot A_{st,pcm,1}}$$

$$t_{ch} = Q_{leakage,ch,pcm,1} \cdot \frac{R_{insulated}}{(T_1 - T_{melting,pcm,1}) \cdot A_{st,pcm,1}}$$

$$L_{pcm,1,i} = 0.1$$

$$R_{t,pcm,1} = R_{HTF,pcm,1} + R_{wall,pcm,1} + R_{pcm,1}$$

$$R_{HTF,pcm,1} = \frac{1}{D_i \cdot 3.142 \cdot h_{f,pcm,1} \cdot L_{pcm,1,i}}$$

$$R_{wall,pcm,1} = \frac{\ln\left[\frac{D_o}{D_i}\right]}{2 \cdot 3.142 \cdot k_{wall} \cdot L_{pcm,1,i}}$$

$$R_{pcm,1} = \frac{\ln\left[\frac{(pc_f \cdot ((p_{pitch} \cdot 0.5)^2 - (D_o \cdot 0.5)^2) + (D_o \cdot 0.5)^2)^{0.5}}{D_o \cdot 0.5}\right]}{2 \cdot 3.142 \cdot k_{pcm,1} \cdot L_{pcm,1,i}}$$

$$h_{f,pcm,1} = Nusselt_{f,pcm,1} \cdot \frac{k_{HTF}}{D_i}$$

$$Nusselt_{f,pcm,1} = 3.66 + \frac{0.0668 \cdot \frac{D_i}{L_{pcm,1,i}} \cdot Pr_{HTF} \cdot Re_f}{1 + 0.04 \cdot \left[\frac{D_i}{L_{pcm,1,i}} \cdot Re_f \cdot Pr_{HTF}\right]^{(2/3)}}$$

$$U_{pcm,1} = \frac{1}{R_{t,pcm,1} \cdot D_o \cdot 3.142 \cdot L_{pcm,1,i}}$$

$$T_{HTF,in,pcm,1} = \frac{18 + 23}{2}$$

$$T_{HTF,out,pcm,1} = \frac{10 + 15}{2}$$

$$\delta_{T,1,pcm,1} = T_{HTF,in,pcm,1} - T_{melting,pcm,1}$$

$$\delta_{T,2,pcm,1} = T_{HTF,out,pcm,1} - T_{melting,pcm,1}$$

$$LMTD_{pcm,1} = \frac{\delta_{T,1,pcm,1} - \delta_{T,2,pcm,1}}{\ln\left[\frac{\delta_{T,1,pcm,1}}{\delta_{T,2,pcm,1}}\right]}$$

$$Q_{st} = U_{pcm,1} \cdot D_o \cdot 3.142 \cdot L_{pcm,1,new} \cdot N \cdot LMTD_{pcm,1}$$

$$A_{pcm,1,i} = N \cdot 3.142 \cdot D_o \cdot L_{pcm,1,new}$$

$$R_{t,pcm,1,new} = R_{HTF,pcm,1,new} + R_{wall,pcm,1,new} + R_{pcm,1,new}$$

$$R_{HTF,pcm,1,new} = \frac{1}{D_i \cdot 3.142 \cdot h_{f,pcm,1} \cdot L_{pcm,1,new}}$$

$$R_{wall,pcm,1,new} = \frac{\ln\left[\frac{D_o}{D_i}\right]}{2 \cdot 3.142 \cdot k_{wall} \cdot L_{pcm,1,new}}$$

$$R_{pcm,1,new} = \frac{\ln\left[\frac{(pc_f \cdot ((p_{pitch} \cdot 0.5)^2 - (D_o \cdot 0.5)^2) + (D_o \cdot 0.5)^2)^{0.5}}{D_o \cdot 0.5}\right]}{2 \cdot 3.142 \cdot k_{pcm,1} \cdot L_{pcm,1,new}}$$

$$h_{f,i,pcm,1,new} = Nusselt_{f,pcm,1,new} \cdot \frac{k_{HTF}}{D_i}$$

$$Nusselt_{f,pcm,1,new} = 3.66 + \frac{0.0668 \cdot \frac{D_i}{L_{pcm,1,new}} \cdot Pr_{HTF} \cdot Re_f}{1 + 0.04 \cdot \left[\frac{D_i}{L_{pcm,1,new}} \cdot Re_f \cdot Pr_{HTF}\right]^{(2/3)}}$$

$$U_{pcm,1,new} = \frac{1}{R_{t,ice,new} \cdot D_o \cdot 3.142 \cdot L_{ice,new}}$$

$$Q_{st} = U_{pcm,1,new} \cdot D_o \cdot 3.142 \cdot L_{pcm,1} \cdot N \cdot LMTD_{pcm,1}$$

$$A_{pcm,1} = N \cdot 3.142 \cdot D_o \cdot L_{pcm,1}$$

$$L_{plus,pcm,1} = \frac{L_{pcm,1}}{D_i \cdot Re_f}$$

$$f_{avg,pcm,1} = \frac{4}{Re_f} \cdot \left[\frac{3.44}{\sqrt{L_{plus,pcm,1}}} + \frac{\frac{1.25}{4 \cdot L_{plus,pcm,1}} + \frac{64}{4} - \frac{3.44}{\sqrt{L_{plus,pcm,1}}}}{1 + \frac{0.00021}{L_{plus,pcm,1}^2}}\right]$$

$$P_{drop,pcm,1} = f_{avg,pcm,1} \cdot \frac{L_{pcm,1}}{D_i} \cdot \frac{\dot{m}_{HTF}^2}{2 \cdot \rho_{HTF} \cdot A_{cross,tube}^2}$$

$$C_{B,pcm,1} = 16648.3 \cdot A_{pcm,1}^{0.6123}$$

SOLUTION

Unit Settings: SI C Pa J mass deg

(pcm_1 varying m_dot_HTF@N=150, Run 200)

$A_{cross,tube}$ = 0.003538 [m^2]
$A_{ice,i}$ = 0.7228 [m^2]
$A_{pcm,1,i}$ = 1.01 [m^2]
$A_{st,pcm,1}$ = 2.276 [m^2]
cp_{HTF} = 4191 [J/kg*C]
$C_{B,pcm,1}$ = 10590
$\delta_{T,1}$ = 12 [C]
$\delta_{T,2}$ = 4 [C]
D_i = 0.00548 [m]
η_{st} = 0.9
$f_{avg,pcm,1}$ = 0.3301
$h_{f,ice,new}$ = 617.4 [W/m^2-C]
$h_{f,pcm,1}$ = 819.9 [W/m^2-C]
h_{g2} = 2.543E+06 [J/kg]
$h_{l,pcm,1}$ = 231000 [J/kg]
k_{ice} = 2.22 [W/m-C]
k_{wall} = 398 [W/m-C]
$LMTD_{pcm,1}$ = 11.02 [C]
$L_{ice,i}$ = 0.1 [m]
$L_{pcm,1}$ = 0.1584 [m]
$L_{pcm,1,new}$ = 0.335 [m]
$L_{plus,pcm,1}$ = 0.1304
$\dot{m}_{HTF}$ = 0.2 [kg/s]
$Nusselt_{f,ice}$ = 7.801
$Nusselt_{f,pcm,1}$ = 7.801
ω_1 = 0.002369
pc_f = 0.9
P_{amb} = 100000 [Pa]
$P_{drop,pcm,1}$ = 15.24 [Pa]
$P_{sat,1}$ = 4951 [Pa]
Q_c = 22000 [Wh]
$Q_{leakage,ch}$ = 515.4 [Wh]
$Q_{leakage,dc}$ = 382.8 [Wh]
Q_{st} = 24444 [Wh]
$Q_{st,J}$ = 8.798E+07 [J]
$relative_{humidity,2}$ = 0.55
ρ_{HTF} = 1000 [kg/m^3]
$\rho_{pcm,1}$ = 1445 [kg/m^3]
$R_{HTF,new}$ = 0.2956 [C/W]
$R_{HTF,pcm,1,new}$ = 0.2115 [C/W]
$R_{ice,new}$ = 0.1957 [C/W]
$R_{pcm,1}$ = 1.783 [C/W]
$R_{t,ice}$ = 1.178 [C/W]
$R_{t,pcm,1}$ = 2.492 [C/W]
R_{wall} = 0.0006206 [C/W]
$R_{wall,pcm,1}$ = 0.0006206 [C/W]
$time_{dc}$ = 11 [h]
T_1 = 32.7 [C]
$T_{avg,AHU}$ = 27.85 [C]
t_{dc} = 11 [h]
$T_{HTF,avg}$ = 8 [C]
$T_{HTF,in,pcm,1}$ = 20.5 [C]

A_{ice} = 0.7228 [m^2]
$A_{pcm,1}$ = 0.4776 [m^2]
A_{st} = 2.401 [m^2]
$cp_{air,AHU}$ = 1005 [J/kg-C]
C_B = 13648
$\delta_{h,AHU}$ = 13179 [J/kg]
$\delta_{T,1,pcm,1}$ = 15.5 [C]
$\delta_{T,2,pcm,1}$ = 7.5 [C]
D_o = 0.0064 [m]
$f_{avg,ice}$ = 0.3164
$h_{f,ice}$ = 819.9 [W/m^2-C]
$h_{f,i,pcm,1,new}$ = 564 [$W/C-m^2$]
h_{g1} = 2.560E+06 [J/kg]
$h_{l,ice}$ = 336000 [J/kg]
k_{HTF} = 0.5759 [W/m-C]
$k_{pcm,1}$ = 0.584 [W/m-C]
LMTD = 7.282 [C]
L_{ice} = 0.2397 [m]
$L_{ice,new}$ = 0.2397 [m]
$L_{pcm,1,i}$ = 0.1 [m]
$L_{plus,ice}$ = 0.1974
μ_{HTF} = 0.001398 [Pa-s]
N = 150
$Nusselt_{f,ice,new}$ = 5.875
$Nusselt_{f,pcm,1,new}$ = 5.367
ω_2 = 0.001036
Pr_{HTF} = 10.17
P_{drop} = 22.11 [Pa]
p_{pitch} = 0.0128 [m]
$P_{sat,2}$ = 2811 [Pa]
$Q_{c,dot}$ = 2000 [W]
$Q_{leakage,ch,pcm,1}$ = 413.9 [Wh]
$Q_{leakage,dc,pcm,1}$ = 255.4 [Wh]
$Q_{st,dot}$ = 2222 [W]
$relative_{humidity,1}$ = 0.7
Re_f = 221.6
ρ_{ice} = 917 [kg/m^3]
R_{HTF} = 0.7085 [C/W]
$R_{HTF,pcm,1}$ = 0.7085 [C/W]
R_{ice} = 0.469 [C/W]
$R_{insulated}$ = 1.98 [m^2*C/W]
$R_{pcm,1,new}$ = 0.5322 [C/W]
$R_{t,ice,new}$ = 0.4915 [C/W]
$R_{t,pcm,1,new}$ = 0.7439
$R_{wall,new}$ = 0.0002589 [C/W]
$R_{wall,pcm,1,new}$ = 0.0001853 [C/W]
$tube_t$ = 0.00092 [m]
T_2 = 23 [C]
t_{ch} = 13 [h]
$T_{fp,HTF}$ = -0.07306 [C]
$T_{HTF,in}$ = 12 [C]
$T_{HTF,out}$ = 4 [C]

$T_{HTF,out,pcm,1}$ = 12.5 [C]
$T_{melting,pcm,1}$ = 5 [C]
U_{new} = 422.2 [W/m^2-C]
$U_{pcm,1,new}$ = 422.2 [W/C-m^2]
$V_{pcm,1}$ = 0.2636 [m^3]

$T_{melting,ice}$ = 0 [C]
U = 422.2 [W/C-m^2]
$U_{pcm,1}$ = 199.6 [W/C-m^2]
V_{ice} = 0.2856 [m^3]

No unit problems were detected. (3 disabled)

KEY VARIABLES
(pcm_1 varying m_dot_HTF@N=150, Run 200)
C_B = 13648

Parametric Table: m_dot_HTF@N=20

	$\dot{m}_{HTF}$ [kg/s]	L_{ice} [m]	C_B	P_{drop} [Pa]
Run 1	0.05	1.575	12586	255.6
Run 2	0.05075	1.57	12562	258.8
Run 3	0.05151	1.565	12539	262
Run 4	0.05226	1.561	12516	265.1
Run 5	0.05302	1.556	12494	268.3
Run 6	0.05377	1.552	12472	271.5
Run 7	0.05452	1.547	12450	274.6
Run 8	0.05528	1.543	12429	277.8
Run 9	0.05603	1.539	12409	281
Run 10	0.05678	1.535	12388	284.1
Run 11	0.05754	1.531	12368	287.3
Run 12	0.05829	1.527	12348	290.4
Run 13	0.05905	1.523	12329	293.6
Run 14	0.0598	1.519	12310	296.7
Run 15	0.06055	1.515	12291	299.8
Run 16	0.06131	1.511	12272	303
Run 17	0.06206	1.508	12254	306.1
Run 18	0.06281	1.504	12236	309.3
Run 19	0.06357	1.5	12218	312.4
Run 20	0.06432	1.497	12201	315.5
Run 21	0.06508	1.493	12184	318.6
Run 22	0.06583	1.49	12167	321.8
Run 23	0.06658	1.487	12150	324.9
Run 24	0.06734	1.483	12134	328
Run 25	0.06809	1.48	12118	331.1
Run 26	0.06884	1.477	12102	334.2
Run 27	0.0696	1.474	12086	337.3
Run 28	0.07035	1.471	12070	340.4
Run 29	0.07111	1.468	12055	343.6
Run 30	0.07186	1.465	12040	346.7
Run 31	0.07261	1.462	12025	349.8
Run 32	0.07337	1.459	12010	352.9
Run 33	0.07412	1.456	11996	356
Run 34	0.07487	1.453	11982	359.1
Run 35	0.07563	1.45	11968	362.2
Run 36	0.07638	1.448	11954	365.3
Run 37	0.07714	1.445	11940	368.4
Run 38	0.07789	1.442	11926	371.5

Parametric Table: m_dot_HTF@N=20

	$\dot{m}_{HTF}$ [kg/s]	L_{ice} [m]	C_B	P_{drop} [Pa]
Run 39	0.07864	1.44	11913	374.6
Run 40	0.0794	1.437	11900	377.7
Run 41	0.08015	1.434	11887	380.8
Run 42	0.0809	1.432	11874	383.9
Run 43	0.08166	1.429	11861	387
Run 44	0.08241	1.427	11848	390.1
Run 45	0.08317	1.424	11836	393.2
Run 46	0.08392	1.422	11824	396.3
Run 47	0.08467	1.42	11811	399.3
Run 48	0.08543	1.417	11799	402.4
Run 49	0.08618	1.415	11788	405.5
Run 50	0.08693	1.413	11776	408.6
Run 51	0.08769	1.41	11764	411.7
Run 52	0.08844	1.408	11753	414.8
Run 53	0.0892	1.406	11741	417.9
Run 54	0.08995	1.404	11730	421
Run 55	0.0907	1.402	11719	424.1
Run 56	0.09146	1.399	11708	427.2
Run 57	0.09221	1.397	11697	430.3
Run 58	0.09296	1.395	11687	433.4
Run 59	0.09372	1.393	11676	436.4
Run 60	0.09447	1.391	11665	439.5
Run 61	0.09523	1.389	11655	442.6
Run 62	0.09598	1.387	11645	445.7
Run 63	0.09673	1.385	11635	448.8
Run 64	0.09749	1.383	11624	451.9
Run 65	0.09824	1.381	11614	455
Run 66	0.09899	1.379	11605	458.1
Run 67	0.09975	1.377	11595	461.2
Run 68	0.1005	1.376	11585	464.3
Run 69	0.1013	1.374	11576	467.4
Run 70	0.102	1.372	11566	470.4
Run 71	0.1028	1.37	11557	473.5
Run 72	0.1035	1.368	11547	476.6
Run 73	0.1043	1.366	11538	479.7
Run 74	0.105	1.365	11529	482.8
Run 75	0.1058	1.363	11520	485.9
Run 76	0.1065	1.361	11511	489
Run 77	0.1073	1.359	11502	492.1
Run 78	0.108	1.358	11493	495.2
Run 79	0.1088	1.356	11485	498.3
Run 80	0.1095	1.354	11476	501.4
Run 81	0.1103	1.353	11467	504.5
Run 82	0.1111	1.351	11459	507.6
Run 83	0.1118	1.35	11451	510.7
Run 84	0.1126	1.348	11442	513.8
Run 85	0.1133	1.346	11434	516.9
Run 86	0.1141	1.345	11426	520
Run 87	0.1148	1.343	11418	523.1
Run 88	0.1156	1.342	11410	526.2
Run 89	0.1163	1.34	11402	529.3
Run 90	0.1171	1.339	11394	532.4

Parametric Table: m_dot_HTF@N=20

	$\dot{m}_{HTF}$ [kg/s]	L_{ice} [m]	C_B	P_{drop} [Pa]
Run 91	0.1178	1.337	11386	535.5
Run 92	0.1186	1.336	11378	538.6
Run 93	0.1193	1.334	11371	541.7
Run 94	0.1201	1.333	11363	544.8
Run 95	0.1209	1.331	11355	547.9
Run 96	0.1216	1.33	11348	551.1
Run 97	0.1224	1.328	11341	554.2
Run 98	0.1231	1.327	11333	557.3
Run 99	0.1239	1.326	11326	560.4
Run 100	0.1246	1.324	11319	563.5
Run 101	0.1254	1.323	11311	566.6
Run 102	0.1261	1.321	11304	569.7
Run 103	0.1269	1.32	11297	572.8
Run 104	0.1276	1.319	11290	576
Run 105	0.1284	1.317	11283	579.1
Run 106	0.1291	1.316	11276	582.2
Run 107	0.1299	1.315	11269	585.3
Run 108	0.1307	1.314	11263	588.4
Run 109	0.1314	1.312	11256	591.6
Run 110	0.1322	1.311	11249	594.7
Run 111	0.1329	1.31	11243	597.8
Run 112	0.1337	1.308	11236	600.9
Run 113	0.1344	1.307	11229	604.1
Run 114	0.1352	1.306	11223	607.2
Run 115	0.1359	1.305	11216	610.3
Run 116	0.1367	1.304	11210	613.5
Run 117	0.1374	1.302	11204	616.6
Run 118	0.1382	1.301	11197	619.7
Run 119	0.1389	1.3	11191	622.9
Run 120	0.1397	1.299	11185	626
Run 121	0.1405	1.298	11179	629.1
Run 122	0.1412	1.296	11173	632.3
Run 123	0.142	1.295	11166	635.4
Run 124	0.1427	1.294	11160	638.6
Run 125	0.1435	1.293	11154	641.7
Run 126	0.1442	1.292	11148	644.9
Run 127	0.145	1.291	11143	648
Run 128	0.1457	1.29	11137	651.1
Run 129	0.1465	1.289	11131	654.3
Run 130	0.1472	1.287	11125	657.4
Run 131	0.148	1.286	11119	660.6
Run 132	0.1487	1.285	11114	663.7
Run 133	0.1495	1.284	11108	666.9
Run 134	0.1503	1.283	11102	670.1
Run 135	0.151	1.282	11097	673.2
Run 136	0.1518	1.281	11091	676.4
Run 137	0.1525	1.28	11086	679.5
Run 138	0.1533	1.279	11080	682.7
Run 139	0.154	1.278	11075	685.9
Run 140	0.1548	1.277	11069	689
Run 141	0.1555	1.276	11064	692.2
Run 142	0.1563	1.275	11059	695.4

Parametric Table: m_dot_HTF@N=20

	$\dot{m}_{HTF}$ [kg/s]	L_{ice} [m]	C_B	P_{drop} [Pa]
Run 143	0.157	1.274	11053	698.5
Run 144	0.1578	1.273	11048	701.7
Run 145	0.1585	1.272	11043	704.9
Run 146	0.1593	1.271	11038	708
Run 147	0.1601	1.27	11032	711.2
Run 148	0.1608	1.269	11027	714.4
Run 149	0.1616	1.268	11022	717.6
Run 150	0.1623	1.267	11017	720.7
Run 151	0.1631	1.266	11012	723.9
Run 152	0.1638	1.265	11007	727.1
Run 153	0.1646	1.264	11002	730.3
Run 154	0.1653	1.263	10997	733.5
Run 155	0.1661	1.262	10992	736.7
Run 156	0.1668	1.261	10987	739.9
Run 157	0.1676	1.261	10982	743
Run 158	0.1683	1.26	10978	746.2
Run 159	0.1691	1.259	10973	749.4
Run 160	0.1698	1.258	10968	752.6
Run 161	0.1706	1.257	10963	755.8
Run 162	0.1714	1.256	10959	759
Run 163	0.1721	1.255	10954	762.2
Run 164	0.1729	1.254	10949	765.4
Run 165	0.1736	1.254	10945	768.6
Run 166	0.1744	1.253	10940	771.8
Run 167	0.1751	1.252	10935	775
Run 168	0.1759	1.251	10931	778.2
Run 169	0.1766	1.25	10926	781.5
Run 170	0.1774	1.249	10922	784.7
Run 171	0.1781	1.248	10917	787.9
Run 172	0.1789	1.248	10913	791.1
Run 173	0.1796	1.247	10909	794.3
Run 174	0.1804	1.246	10904	797.5
Run 175	0.1812	1.245	10900	800.8
Run 176	0.1819	1.244	10895	804
Run 177	0.1827	1.244	10891	807.2
Run 178	0.1834	1.243	10887	810.4
Run 179	0.1842	1.242	10883	813.7
Run 180	0.1849	1.241	10878	816.9
Run 181	0.1857	1.24	10874	820.1
Run 182	0.1864	1.24	10870	823.4
Run 183	0.1872	1.239	10866	826.6
Run 184	0.1879	1.238	10862	829.8
Run 185	0.1887	1.237	10857	833.1
Run 186	0.1894	1.236	10853	836.3
Run 187	0.1902	1.236	10849	839.5
Run 188	0.191	1.235	10845	842.8
Run 189	0.1917	1.234	10841	846
Run 190	0.1925	1.233	10837	849.3
Run 191	0.1932	1.233	10833	852.5
Run 192	0.194	1.232	10829	855.8
Run 193	0.1947	1.231	10825	859
Run 194	0.1955	1.23	10821	862.3

Parametric Table: m_dot_HTF@N=20

	$\dot{m}_{HTF}$ [kg/s]	L_{ice} [m]	C_B	P_{drop} [Pa]
Run 195	0.1962	1.23	10817	865.5
Run 196	0.197	1.229	10813	868.8
Run 197	0.1977	1.228	10810	872.1
Run 198	0.1985	1.228	10806	875.3
Run 199	0.1992	1.227	10802	878.6
Run 200	0.2	1.226	10798	881.9

Parametric Table: m_dot_HTF@N=50

	$\dot{m}_{HTF}$ [kg/s]	L_{ice} [m]	C_B	P_{drop} [Pa]
Run 1	0.05	0.7643	14168	49.39
Run 2	0.05075	0.7619	14141	49.99
Run 3	0.05151	0.7596	14114	50.6
Run 4	0.05226	0.7572	14087	51.2
Run 5	0.05302	0.7549	14061	51.81
Run 6	0.05377	0.7527	14035	52.41
Run 7	0.05452	0.7505	14010	53.01
Run 8	0.05528	0.7483	13985	53.61
Run 9	0.05603	0.7461	13961	54.2
Run 10	0.05678	0.744	13936	54.8
Run 11	0.05754	0.7419	13912	55.4
Run 12	0.05829	0.7399	13889	55.99
Run 13	0.05905	0.7379	13866	56.58
Run 14	0.0598	0.7359	13843	57.17
Run 15	0.06055	0.7339	13820	57.77
Run 16	0.06131	0.732	13798	58.36
Run 17	0.06206	0.7301	13776	58.94
Run 18	0.06281	0.7282	13754	59.53
Run 19	0.06357	0.7264	13733	60.12
Run 20	0.06432	0.7245	13712	60.7
Run 21	0.06508	0.7227	13691	61.29
Run 22	0.06583	0.721	13670	61.87
Run 23	0.06658	0.7192	13650	62.46
Run 24	0.06734	0.7175	13630	63.04
Run 25	0.06809	0.7158	13610	63.62
Run 26	0.06884	0.7141	13591	64.2
Run 27	0.0696	0.7125	13571	64.78
Run 28	0.07035	0.7108	13552	65.36
Run 29	0.07111	0.7092	13533	65.94
Run 30	0.07186	0.7076	13515	66.52
Run 31	0.07261	0.706	13496	67.1
Run 32	0.07337	0.7045	13478	67.67
Run 33	0.07412	0.703	13460	68.25
Run 34	0.07487	0.7014	13443	68.82
Run 35	0.07563	0.7	13425	69.4
Run 36	0.07638	0.6985	13408	69.97
Run 37	0.07714	0.697	13390	70.55
Run 38	0.07789	0.6956	13374	71.12
Run 39	0.07864	0.6942	13357	71.69
Run 40	0.0794	0.6927	13340	72.27

Parametric Table: m_dot_HTF@N=50

	$\dot{m}_{HTF}$ [kg/s]	L_{ice} [m]	C_B	P_{drop} [Pa]
Run 41	0.08015	0.6914	13324	72.84
Run 42	0.0809	0.69	13308	73.41
Run 43	0.08166	0.6886	13291	73.98
Run 44	0.08241	0.6873	13276	74.55
Run 45	0.08317	0.686	13260	75.12
Run 46	0.08392	0.6846	13244	75.69
Run 47	0.08467	0.6833	13229	76.26
Run 48	0.08543	0.6821	13214	76.82
Run 49	0.08618	0.6808	13199	77.39
Run 50	0.08693	0.6795	13184	77.96
Run 51	0.08769	0.6783	13169	78.53
Run 52	0.08844	0.6771	13154	79.09
Run 53	0.0892	0.6758	13140	79.66
Run 54	0.08995	0.6746	13126	80.23
Run 55	0.0907	0.6735	13112	80.79
Run 56	0.09146	0.6723	13097	81.36
Run 57	0.09221	0.6711	13084	81.92
Run 58	0.09296	0.67	13070	82.49
Run 59	0.09372	0.6688	13056	83.05
Run 60	0.09447	0.6677	13043	83.61
Run 61	0.09523	0.6666	13029	84.18
Run 62	0.09598	0.6655	13016	84.74
Run 63	0.09673	0.6644	13003	85.31
Run 64	0.09749	0.6633	12990	85.87
Run 65	0.09824	0.6622	12977	86.43
Run 66	0.09899	0.6612	12964	86.99
Run 67	0.09975	0.6601	12952	87.56
Run 68	0.1005	0.6591	12939	88.12
Run 69	0.1013	0.658	12927	88.68
Run 70	0.102	0.657	12915	89.24
Run 71	0.1028	0.656	12902	89.8
Run 72	0.1035	0.655	12890	90.36
Run 73	0.1043	0.654	12878	90.92
Run 74	0.105	0.653	12866	91.49
Run 75	0.1058	0.6521	12855	92.05
Run 76	0.1065	0.6511	12843	92.61
Run 77	0.1073	0.6501	12832	93.17
Run 78	0.108	0.6492	12820	93.73
Run 79	0.1088	0.6482	12809	94.29
Run 80	0.1095	0.6473	12797	94.85
Run 81	0.1103	0.6464	12786	95.41
Run 82	0.1111	0.6455	12775	95.97
Run 83	0.1118	0.6446	12764	96.53
Run 84	0.1126	0.6437	12753	97.09
Run 85	0.1133	0.6428	12743	97.65
Run 86	0.1141	0.6419	12732	98.2
Run 87	0.1148	0.641	12721	98.76
Run 88	0.1156	0.6402	12711	99.32
Run 89	0.1163	0.6393	12700	99.88
Run 90	0.1171	0.6384	12690	100.4
Run 91	0.1178	0.6376	12680	101
Run 92	0.1186	0.6368	12669	101.6

Parametric Table: m_dot_HTF@N=50

	$\dot{m}_{HTF}$ [kg/s]	L_{ice} [m]	C_B	P_{drop} [Pa]
Run 93	0.1193	0.6359	12659	102.1
Run 94	0.1201	0.6351	12649	102.7
Run 95	0.1209	0.6343	12639	103.2
Run 96	0.1216	0.6335	12629	103.8
Run 97	0.1224	0.6327	12619	104.4
Run 98	0.1231	0.6319	12610	104.9
Run 99	0.1239	0.6311	12600	105.5
Run 100	0.1246	0.6303	12590	106
Run 101	0.1254	0.6295	12581	106.6
Run 102	0.1261	0.6288	12571	107.1
Run 103	0.1269	0.628	12562	107.7
Run 104	0.1276	0.6272	12553	108.3
Run 105	0.1284	0.6265	12544	108.8
Run 106	0.1291	0.6257	12534	109.4
Run 107	0.1299	0.625	12525	109.9
Run 108	0.1307	0.6242	12516	110.5
Run 109	0.1314	0.6235	12507	111.1
Run 110	0.1322	0.6228	12498	111.6
Run 111	0.1329	0.6221	12490	112.2
Run 112	0.1337	0.6214	12481	112.7
Run 113	0.1344	0.6206	12472	113.3
Run 114	0.1352	0.6199	12463	113.8
Run 115	0.1359	0.6192	12455	114.4
Run 116	0.1367	0.6186	12446	115
Run 117	0.1374	0.6179	12438	115.5
Run 118	0.1382	0.6172	12429	116.1
Run 119	0.1389	0.6165	12421	116.6
Run 120	0.1397	0.6158	12413	117.2
Run 121	0.1405	0.6152	12404	117.8
Run 122	0.1412	0.6145	12396	118.3
Run 123	0.142	0.6138	12388	118.9
Run 124	0.1427	0.6132	12380	119.4
Run 125	0.1435	0.6125	12372	120
Run 126	0.1442	0.6119	12364	120.5
Run 127	0.145	0.6112	12356	121.1
Run 128	0.1457	0.6106	12348	121.7
Run 129	0.1465	0.61	12340	122.2
Run 130	0.1472	0.6094	12333	122.8
Run 131	0.148	0.6087	12325	123.3
Run 132	0.1487	0.6081	12317	123.9
Run 133	0.1495	0.6075	12310	124.5
Run 134	0.1503	0.6069	12302	125
Run 135	0.151	0.6063	12294	125.6
Run 136	0.1518	0.6057	12287	126.1
Run 137	0.1525	0.6051	12280	126.7
Run 138	0.1533	0.6045	12272	127.3
Run 139	0.154	0.6039	12265	127.8
Run 140	0.1548	0.6033	12258	128.4
Run 141	0.1555	0.6027	12250	128.9
Run 142	0.1563	0.6022	12243	129.5
Run 143	0.157	0.6016	12236	130.1
Run 144	0.1578	0.601	12229	130.6

Parametric Table: m_dot_HTF@N=50

	$\dot{m}_{HTF}$ [kg/s]	L_{ice} [m]	C_B	P_{drop} [Pa]
Run 145	0.1585	0.6004	12222	131.2
Run 146	0.1593	0.5999	12215	131.7
Run 147	0.1601	0.5993	12208	132.3
Run 148	0.1608	0.5988	12201	132.9
Run 149	0.1616	0.5982	12194	133.4
Run 150	0.1623	0.5977	12187	134
Run 151	0.1631	0.5971	12180	134.6
Run 152	0.1638	0.5966	12174	135.1
Run 153	0.1646	0.596	12167	135.7
Run 154	0.1653	0.5955	12160	136.2
Run 155	0.1661	0.595	12154	136.8
Run 156	0.1668	0.5944	12147	137.4
Run 157	0.1676	0.5939	12140	137.9
Run 158	0.1683	0.5934	12134	138.5
Run 159	0.1691	0.5929	12127	139.1
Run 160	0.1698	0.5924	12121	139.6
Run 161	0.1706	0.5918	12114	140.2
Run 162	0.1714	0.5913	12108	140.7
Run 163	0.1721	0.5908	12102	141.3
Run 164	0.1729	0.5903	12095	141.9
Run 165	0.1736	0.5898	12089	142.4
Run 166	0.1744	0.5893	12083	143
Run 167	0.1751	0.5888	12077	143.6
Run 168	0.1759	0.5883	12070	144.1
Run 169	0.1766	0.5879	12064	144.7
Run 170	0.1774	0.5874	12058	145.3
Run 171	0.1781	0.5869	12052	145.8
Run 172	0.1789	0.5864	12046	146.4
Run 173	0.1796	0.5859	12040	146.9
Run 174	0.1804	0.5855	12034	147.5
Run 175	0.1812	0.585	12028	148.1
Run 176	0.1819	0.5845	12022	148.6
Run 177	0.1827	0.584	12016	149.2
Run 178	0.1834	0.5836	12010	149.8
Run 179	0.1842	0.5831	12005	150.3
Run 180	0.1849	0.5827	11999	150.9
Run 181	0.1857	0.5822	11993	151.5
Run 182	0.1864	0.5817	11987	152
Run 183	0.1872	0.5813	11982	152.6
Run 184	0.1879	0.5808	11976	153.2
Run 185	0.1887	0.5804	11970	153.7
Run 186	0.1894	0.58	11965	154.3
Run 187	0.1902	0.5795	11959	154.9
Run 188	0.191	0.5791	11954	155.4
Run 189	0.1917	0.5786	11948	156
Run 190	0.1925	0.5782	11943	156.6
Run 191	0.1932	0.5778	11937	157.2
Run 192	0.194	0.5773	11932	157.7
Run 193	0.1947	0.5769	11926	158.3
Run 194	0.1955	0.5765	11921	158.9
Run 195	0.1962	0.5761	11916	159.4
Run 196	0.197	0.5756	11910	160

Parametric Table: m_dot_HTF@N=50

	$\dot{m}_{HTF}$ [kg/s]	L_{ice} [m]	C_B	P_{drop} [Pa]
Run 197	0.1977	*0.5752*	*11905*	*160.6*
Run 198	0.1985	*0.5748*	*11900*	*161.1*
Run 199	0.1992	*0.5744*	*11894*	*161.7*
Run 200	0.2	*0.574*	*11889*	*162.3*

Parametric Table: m_dot_HTF@N=150

	$\dot{m}_{HTF}$ [kg/s]	L_{ice} [m]	P_{drop} [Pa]	C_B
Run 1	0.05	*0.3143*	*6.741*	*16112*
Run 2	0.05075	*0.3136*	*6.828*	*16088*
Run 3	0.05151	*0.3128*	*6.915*	*16064*
Run 4	0.05226	*0.312*	*7.002*	*16041*
Run 5	0.05302	*0.3113*	*7.088*	*16018*
Run 6	0.05377	*0.3106*	*7.175*	*15994*
Run 7	0.05452	*0.3098*	*7.26*	*15972*
Run 8	0.05528	*0.3091*	*7.346*	*15949*
Run 9	0.05603	*0.3084*	*7.432*	*15927*
Run 10	0.05678	*0.3077*	*7.517*	*15904*
Run 11	0.05754	*0.307*	*7.602*	*15882*
Run 12	0.05829	*0.3063*	*7.687*	*15861*
Run 13	0.05905	*0.3057*	*7.772*	*15839*
Run 14	0.0598	*0.305*	*7.856*	*15818*
Run 15	0.06055	*0.3043*	*7.941*	*15797*
Run 16	0.06131	*0.3037*	*8.025*	*15776*
Run 17	0.06206	*0.303*	*8.109*	*15755*
Run 18	0.06281	*0.3024*	*8.192*	*15735*
Run 19	0.06357	*0.3017*	*8.276*	*15714*
Run 20	0.06432	*0.3011*	*8.359*	*15694*
Run 21	0.06508	*0.3005*	*8.443*	*15674*
Run 22	0.06583	*0.2999*	*8.526*	*15654*
Run 23	0.06658	*0.2992*	*8.609*	*15635*
Run 24	0.06734	*0.2986*	*8.691*	*15615*
Run 25	0.06809	*0.298*	*8.774*	*15596*
Run 26	0.06884	*0.2974*	*8.856*	*15577*
Run 27	0.0696	*0.2969*	*8.938*	*15558*
Run 28	0.07035	*0.2963*	*9.021*	*15539*
Run 29	0.07111	*0.2957*	*9.103*	*15521*
Run 30	0.07186	*0.2951*	*9.184*	*15502*
Run 31	0.07261	*0.2946*	*9.266*	*15484*
Run 32	0.07337	*0.294*	*9.347*	*15466*
Run 33	0.07412	*0.2934*	*9.429*	*15448*
Run 34	0.07487	*0.2929*	*9.51*	*15430*
Run 35	0.07563	*0.2923*	*9.591*	*15413*
Run 36	0.07638	*0.2918*	*9.672*	*15395*
Run 37	0.07714	*0.2913*	*9.753*	*15378*
Run 38	0.07789	*0.2907*	*9.834*	*15360*
Run 39	0.07864	*0.2902*	*9.914*	*15343*
Run 40	0.0794	*0.2897*	*9.995*	*15326*
Run 41	0.08015	*0.2892*	*10.07*	*15310*
Run 42	0.0809	*0.2886*	*10.16*	*15293*

Parametric Table: m_dot_HTF@N=150

	$\dot{m}_{HTF}$ [kg/s]	L_{ice} [m]	P_{drop} [Pa]	C_B
Run 43	0.08166	0.2881	10.24	15276
Run 44	0.08241	0.2876	10.32	15260
Run 45	0.08317	0.2871	10.4	15244
Run 46	0.08392	0.2866	10.47	15228
Run 47	0.08467	0.2861	10.55	15212
Run 48	0.08543	0.2856	10.63	15196
Run 49	0.08618	0.2852	10.71	15180
Run 50	0.08693	0.2847	10.79	15164
Run 51	0.08769	0.2842	10.87	15149
Run 52	0.08844	0.2837	10.95	15133
Run 53	0.0892	0.2833	11.03	15118
Run 54	0.08995	0.2828	11.11	15103
Run 55	0.0907	0.2823	11.19	15088
Run 56	0.09146	0.2819	11.27	15073
Run 57	0.09221	0.2814	11.35	15058
Run 58	0.09296	0.281	11.42	15043
Run 59	0.09372	0.2805	11.5	15029
Run 60	0.09447	0.2801	11.58	15014
Run 61	0.09523	0.2797	11.66	15000
Run 62	0.09598	0.2792	11.74	14985
Run 63	0.09673	0.2788	11.81	14971
Run 64	0.09749	0.2784	11.89	14957
Run 65	0.09824	0.2779	11.97	14943
Run 66	0.09899	0.2775	12.05	14929
Run 67	0.09975	0.2771	12.13	14915
Run 68	0.1005	0.2767	12.2	14902
Run 69	0.1013	0.2763	12.28	14888
Run 70	0.102	0.2759	12.36	14875
Run 71	0.1028	0.2754	12.44	14861
Run 72	0.1035	0.275	12.51	14848
Run 73	0.1043	0.2746	12.59	14835
Run 74	0.105	0.2742	12.67	14821
Run 75	0.1058	0.2738	12.75	14808
Run 76	0.1065	0.2735	12.82	14795
Run 77	0.1073	0.2731	12.9	14782
Run 78	0.108	0.2727	12.98	14770
Run 79	0.1088	0.2723	13.05	14757
Run 80	0.1095	0.2719	13.13	14744
Run 81	0.1103	0.2715	13.21	14732
Run 82	0.1111	0.2712	13.28	14719
Run 83	0.1118	0.2708	13.36	14707
Run 84	0.1126	0.2704	13.44	14695
Run 85	0.1133	0.2701	13.51	14682
Run 86	0.1141	0.2697	13.59	14670
Run 87	0.1148	0.2693	13.67	14658
Run 88	0.1156	0.269	13.74	14646
Run 89	0.1163	0.2686	13.82	14634
Run 90	0.1171	0.2683	13.9	14622
Run 91	0.1178	0.2679	13.97	14611
Run 92	0.1186	0.2676	14.05	14599
Run 93	0.1193	0.2672	14.12	14587
Run 94	0.1201	0.2669	14.2	14576

Parametric Table: m_dot_HTF@N=150

	$\dot{m}_{HTF}$ [kg/s]	L_{ice} [m]	P_{drop} [Pa]	C_B
Run 95	0.1209	0.2665	14.28	14564
Run 96	0.1216	0.2662	14.35	14553
Run 97	0.1224	0.2658	14.43	14541
Run 98	0.1231	0.2655	14.5	14530
Run 99	0.1239	0.2652	14.58	14519
Run 100	0.1246	0.2648	14.66	14508
Run 101	0.1254	0.2645	14.73	14497
Run 102	0.1261	0.2642	14.81	14486
Run 103	0.1269	0.2638	14.88	14475
Run 104	0.1276	0.2635	14.96	14464
Run 105	0.1284	0.2632	15.03	14453
Run 106	0.1291	0.2629	15.11	14442
Run 107	0.1299	0.2626	15.19	14432
Run 108	0.1307	0.2622	15.26	14421
Run 109	0.1314	0.2619	15.34	14411
Run 110	0.1322	0.2616	15.41	14400
Run 111	0.1329	0.2613	15.49	14390
Run 112	0.1337	0.261	15.56	14379
Run 113	0.1344	0.2607	15.64	14369
Run 114	0.1352	0.2604	15.71	14359
Run 115	0.1359	0.2601	15.79	14348
Run 116	0.1367	0.2598	15.86	14338
Run 117	0.1374	0.2595	15.94	14328
Run 118	0.1382	0.2592	16.01	14318
Run 119	0.1389	0.2589	16.09	14308
Run 120	0.1397	0.2586	16.16	14298
Run 121	0.1405	0.2583	16.24	14288
Run 122	0.1412	0.258	16.31	14279
Run 123	0.142	0.2577	16.39	14269
Run 124	0.1427	0.2575	16.46	14259
Run 125	0.1435	0.2572	16.54	14250
Run 126	0.1442	0.2569	16.61	14240
Run 127	0.145	0.2566	16.69	14230
Run 128	0.1457	0.2563	16.76	14221
Run 129	0.1465	0.2561	16.84	14211
Run 130	0.1472	0.2558	16.91	14202
Run 131	0.148	0.2555	16.99	14193
Run 132	0.1487	0.2552	17.06	14183
Run 133	0.1495	0.255	17.14	14174
Run 134	0.1503	0.2547	17.21	14165
Run 135	0.151	0.2544	17.29	14156
Run 136	0.1518	0.2541	17.36	14147
Run 137	0.1525	0.2539	17.44	14138
Run 138	0.1533	0.2536	17.51	14129
Run 139	0.154	0.2534	17.58	14120
Run 140	0.1548	0.2531	17.66	14111
Run 141	0.1555	0.2528	17.73	14102
Run 142	0.1563	0.2526	17.81	14093
Run 143	0.157	0.2523	17.88	14084
Run 144	0.1578	0.2521	17.96	14076
Run 145	0.1585	0.2518	18.03	14067
Run 146	0.1593	0.2516	18.11	14058

Parametric Table: m_dot_HTF@N=150

	$\dot{m}_{HTF}$ [kg/s]	L_{ice} [m]	P_{drop} [Pa]	C_B
Run 147	0.1601	0.2513	18.18	14050
Run 148	0.1608	0.2511	18.26	14041
Run 149	0.1616	0.2508	18.33	14033
Run 150	0.1623	0.2506	18.4	14024
Run 151	0.1631	0.2503	18.48	14016
Run 152	0.1638	0.2501	18.55	14007
Run 153	0.1646	0.2498	18.63	13999
Run 154	0.1653	0.2496	18.7	13991
Run 155	0.1661	0.2493	18.78	13982
Run 156	0.1668	0.2491	18.85	13974
Run 157	0.1676	0.2489	18.92	13966
Run 158	0.1683	0.2486	19	13958
Run 159	0.1691	0.2484	19.07	13950
Run 160	0.1698	0.2482	19.15	13942
Run 161	0.1706	0.2479	19.22	13934
Run 162	0.1714	0.2477	19.3	13926
Run 163	0.1721	0.2475	19.37	13918
Run 164	0.1729	0.2472	19.44	13910
Run 165	0.1736	0.247	19.52	13902
Run 166	0.1744	0.2468	19.59	13894
Run 167	0.1751	0.2466	19.67	13886
Run 168	0.1759	0.2463	19.74	13879
Run 169	0.1766	0.2461	19.82	13871
Run 170	0.1774	0.2459	19.89	13863
Run 171	0.1781	0.2457	19.96	13855
Run 172	0.1789	0.2454	20.04	13848
Run 173	0.1796	0.2452	20.11	13840
Run 174	0.1804	0.245	20.19	13833
Run 175	0.1812	0.2448	20.26	13825
Run 176	0.1819	0.2446	20.34	13818
Run 177	0.1827	0.2444	20.41	13810
Run 178	0.1834	0.2441	20.48	13803
Run 179	0.1842	0.2439	20.56	13796
Run 180	0.1849	0.2437	20.63	13788
Run 181	0.1857	0.2435	20.71	13781
Run 182	0.1864	0.2433	20.78	13774
Run 183	0.1872	0.2431	20.85	13766
Run 184	0.1879	0.2429	20.93	13759
Run 185	0.1887	0.2427	21	13752
Run 186	0.1894	0.2425	21.08	13745
Run 187	0.1902	0.2423	21.15	13738
Run 188	0.191	0.2421	21.22	13731
Run 189	0.1917	0.2419	21.3	13723
Run 190	0.1925	0.2416	21.37	13716
Run 191	0.1932	0.2414	21.45	13709
Run 192	0.194	0.2412	21.52	13703
Run 193	0.1947	0.241	21.6	13696
Run 194	0.1955	0.2408	21.67	13689
Run 195	0.1962	0.2407	21.74	13682
Run 196	0.197	0.2405	21.82	13675
Run 197	0.1977	0.2403	21.89	13668
Run 198	0.1985	0.2401	21.97	13661

Parametric Table: m_dot_HTF@N=150

	$\dot{m}_{HTF}$ [kg/s]	L_{ice} [m]	P_{drop} [Pa]	C_B
Run 199	0.1992	*0.2399*	*22.04*	*13655*
Run 200	0.2	*0.2397*	*22.11*	*13648*

Parametric Table: pcm_1 varying m_dot_HTF@N=20

	$\dot{m}_{HTF}$ [kg/s]	$L_{pcm,1}$ [m]	$P_{drop,pcm,1}$ [Pa]	$C_{B,pcm,1}$
Run 1	0.05	*1.041*	*171.2*	*9766*
Run 2	0.05075	*1.037*	*173.4*	*9747*
Run 3	0.05151	*1.034*	*175.6*	*9729*
Run 4	0.05226	*1.031*	*177.7*	*9712*
Run 5	0.05302	*1.028*	*179.9*	*9694*
Run 6	0.05377	*1.025*	*182.1*	*9677*
Run 7	0.05452	*1.022*	*184.2*	*9661*
Run 8	0.05528	*1.02*	*186.4*	*9644*
Run 9	0.05603	*1.017*	*188.6*	*9628*
Run 10	0.05678	*1.014*	*190.7*	*9612*
Run 11	0.05754	*1.011*	*192.9*	*9597*
Run 12	0.05829	*1.009*	*195*	*9581*
Run 13	0.05905	*1.006*	*197.2*	*9566*
Run 14	0.0598	*1.004*	*199.4*	*9551*
Run 15	0.06055	*1.001*	*201.5*	*9537*
Run 16	0.06131	*0.9986*	*203.7*	*9522*
Run 17	0.06206	*0.9962*	*205.8*	*9508*
Run 18	0.06281	*0.9938*	*208*	*9494*
Run 19	0.06357	*0.9914*	*210.1*	*9480*
Run 20	0.06432	*0.9891*	*212.3*	*9467*
Run 21	0.06508	*0.9869*	*214.4*	*9454*
Run 22	0.06583	*0.9846*	*216.6*	*9441*
Run 23	0.06658	*0.9824*	*218.7*	*9428*
Run 24	0.06734	*0.9803*	*220.9*	*9415*
Run 25	0.06809	*0.9781*	*223*	*9402*
Run 26	0.06884	*0.976*	*225.2*	*9390*
Run 27	0.0696	*0.9739*	*227.3*	*9378*
Run 28	0.07035	*0.9719*	*229.5*	*9366*
Run 29	0.07111	*0.9699*	*231.7*	*9354*
Run 30	0.07186	*0.9679*	*233.8*	*9342*
Run 31	0.07261	*0.966*	*236*	*9331*
Run 32	0.07337	*0.964*	*238.1*	*9319*
Run 33	0.07412	*0.9621*	*240.3*	*9308*
Run 34	0.07487	*0.9603*	*242.4*	*9297*
Run 35	0.07563	*0.9584*	*244.6*	*9286*
Run 36	0.07638	*0.9566*	*246.7*	*9275*
Run 37	0.07714	*0.9548*	*248.9*	*9264*
Run 38	0.07789	*0.953*	*251*	*9254*
Run 39	0.07864	*0.9513*	*253.2*	*9244*
Run 40	0.0794	*0.9496*	*255.3*	*9233*
Run 41	0.08015	*0.9479*	*257.5*	*9223*
Run 42	0.0809	*0.9462*	*259.6*	*9213*
Run 43	0.08166	*0.9445*	*261.8*	*9203*
Run 44	0.08241	*0.9429*	*263.9*	*9193*

Parametric Table: pcm_1 varying m_dot_HTF@N=20

	$\dot{m}_{HTF}$ [kg/s]	$L_{pcm,1}$ [m]	$P_{drop,pcm,1}$ [Pa]	$C_{B,pcm,1}$
Run 45	0.08317	0.9413	266.1	9184
Run 46	0.08392	0.9397	268.3	9174
Run 47	0.08467	0.9381	270.4	9165
Run 48	0.08543	0.9365	272.6	9155
Run 49	0.08618	0.935	274.7	9146
Run 50	0.08693	0.9335	276.9	9137
Run 51	0.08769	0.932	279	9128
Run 52	0.08844	0.9305	281.2	9119
Run 53	0.0892	0.929	283.4	9110
Run 54	0.08995	0.9276	285.5	9102
Run 55	0.0907	0.9261	287.7	9093
Run 56	0.09146	0.9247	289.9	9085
Run 57	0.09221	0.9233	292	9076
Run 58	0.09296	0.9219	294.2	9068
Run 59	0.09372	0.9206	296.4	9060
Run 60	0.09447	0.9192	298.5	9051
Run 61	0.09523	0.9179	300.7	9043
Run 62	0.09598	0.9165	302.9	9035
Run 63	0.09673	0.9152	305	9028
Run 64	0.09749	0.9139	307.2	9020
Run 65	0.09824	0.9127	309.4	9012
Run 66	0.09899	0.9114	311.6	9004
Run 67	0.09975	0.9101	313.7	8997
Run 68	0.1005	0.9089	315.9	8989
Run 69	0.1013	0.9077	318.1	8982
Run 70	0.102	0.9065	320.3	8974
Run 71	0.1028	0.9053	322.4	8967
Run 72	0.1035	0.9041	324.6	8960
Run 73	0.1043	0.9029	326.8	8953
Run 74	0.105	0.9017	329	8946
Run 75	0.1058	0.9006	331.2	8939
Run 76	0.1065	0.8994	333.4	8932
Run 77	0.1073	0.8983	335.5	8925
Run 78	0.108	0.8972	337.7	8918
Run 79	0.1088	0.8961	339.9	8911
Run 80	0.1095	0.895	342.1	8905
Run 81	0.1103	0.8939	344.3	8898
Run 82	0.1111	0.8928	346.5	8891
Run 83	0.1118	0.8917	348.7	8885
Run 84	0.1126	0.8907	350.9	8878
Run 85	0.1133	0.8896	353.1	8872
Run 86	0.1141	0.8886	355.3	8866
Run 87	0.1148	0.8876	357.5	8859
Run 88	0.1156	0.8865	359.7	8853
Run 89	0.1163	0.8855	361.9	8847
Run 90	0.1171	0.8845	364.1	8841
Run 91	0.1178	0.8835	366.3	8835
Run 92	0.1186	0.8826	368.5	8829
Run 93	0.1193	0.8816	370.7	8823
Run 94	0.1201	0.8806	372.9	8817
Run 95	0.1209	0.8797	375.2	8811
Run 96	0.1216	0.8787	377.4	8805

Parametric Table: pcm_1 varying m_dot_HTF@N=20

	$\dot{m}_{HTF}$ [kg/s]	$L_{pcm,1}$ [m]	$P_{drop,pcm,1}$ [Pa]	$C_{B,pcm,1}$
Run 97	0.1224	0.8778	379.6	8799
Run 98	0.1231	0.8768	381.8	8794
Run 99	0.1239	0.8759	384	8788
Run 100	0.1246	0.875	386.2	8782
Run 101	0.1254	0.8741	388.5	8777
Run 102	0.1261	0.8732	390.7	8771
Run 103	0.1269	0.8723	392.9	8766
Run 104	0.1276	0.8714	395.1	8760
Run 105	0.1284	0.8705	397.4	8755
Run 106	0.1291	0.8697	399.6	8750
Run 107	0.1299	0.8688	401.8	8744
Run 108	0.1307	0.8679	404.1	8739
Run 109	0.1314	0.8671	406.3	8734
Run 110	0.1322	0.8663	408.5	8728
Run 111	0.1329	0.8654	410.8	8723
Run 112	0.1337	0.8646	413	8718
Run 113	0.1344	0.8638	415.3	8713
Run 114	0.1352	0.8629	417.5	8708
Run 115	0.1359	0.8621	419.8	8703
Run 116	0.1367	0.8613	422	8698
Run 117	0.1374	0.8605	424.2	8693
Run 118	0.1382	0.8597	426.5	8688
Run 119	0.1389	0.859	428.7	8683
Run 120	0.1397	0.8582	431	8679
Run 121	0.1405	0.8574	433.3	8674
Run 122	0.1412	0.8566	435.5	8669
Run 123	0.142	0.8559	437.8	8664
Run 124	0.1427	0.8551	440	8660
Run 125	0.1435	0.8544	442.3	8655
Run 126	0.1442	0.8536	444.6	8650
Run 127	0.145	0.8529	446.8	8646
Run 128	0.1457	0.8522	449.1	8641
Run 129	0.1465	0.8514	451.4	8637
Run 130	0.1472	0.8507	453.6	8632
Run 131	0.148	0.85	455.9	8628
Run 132	0.1487	0.8493	458.2	8623
Run 133	0.1495	0.8486	460.5	8619
Run 134	0.1503	0.8479	462.7	8615
Run 135	0.151	0.8472	465	8610
Run 136	0.1518	0.8465	467.3	8606
Run 137	0.1525	0.8458	469.6	8602
Run 138	0.1533	0.8451	471.9	8597
Run 139	0.154	0.8444	474.2	8593
Run 140	0.1548	0.8437	476.5	8589
Run 141	0.1555	0.8431	478.8	8585
Run 142	0.1563	0.8424	481.1	8581
Run 143	0.157	0.8418	483.3	8577
Run 144	0.1578	0.8411	485.6	8572
Run 145	0.1585	0.8404	487.9	8568
Run 146	0.1593	0.8398	490.2	8564
Run 147	0.1601	0.8392	492.6	8560
Run 148	0.1608	0.8385	494.9	8556

Parametric Table: pcm_1 varying m_dot_HTF@N=20

	$\dot{m}_{HTF}$ [kg/s]	$L_{pcm,1}$ [m]	$P_{drop,pcm,1}$ [Pa]	$C_{B,pcm,1}$
Run 149	0.1616	0.8379	497.2	8552
Run 150	0.1623	0.8373	499.5	8548
Run 151	0.1631	0.8366	501.8	8545
Run 152	0.1638	0.836	504.1	8541
Run 153	0.1646	0.8354	506.4	8537
Run 154	0.1653	0.8348	508.7	8533
Run 155	0.1661	0.8342	511.1	8529
Run 156	0.1668	0.8336	513.4	8525
Run 157	0.1676	0.833	515.7	8522
Run 158	0.1683	0.8324	518	8518
Run 159	0.1691	0.8318	520.3	8514
Run 160	0.1698	0.8312	522.7	8510
Run 161	0.1706	0.8306	525	8507
Run 162	0.1714	0.83	527.3	8503
Run 163	0.1721	0.8294	529.7	8499
Run 164	0.1729	0.8289	532	8496
Run 165	0.1736	0.8283	534.4	8492
Run 166	0.1744	0.8277	536.7	8489
Run 167	0.1751	0.8272	539	8485
Run 168	0.1759	0.8266	541.4	8482
Run 169	0.1766	0.826	543.7	8478
Run 170	0.1774	0.8255	546.1	8475
Run 171	0.1781	0.8249	548.4	8471
Run 172	0.1789	0.8244	550.8	8468
Run 173	0.1796	0.8238	553.1	8464
Run 174	0.1804	0.8233	555.5	8461
Run 175	0.1812	0.8227	557.9	8457
Run 176	0.1819	0.8222	560.2	8454
Run 177	0.1827	0.8217	562.6	8451
Run 178	0.1834	0.8212	564.9	8447
Run 179	0.1842	0.8206	567.3	8444
Run 180	0.1849	0.8201	569.7	8441
Run 181	0.1857	0.8196	572.1	8437
Run 182	0.1864	0.8191	574.4	8434
Run 183	0.1872	0.8186	576.8	8431
Run 184	0.1879	0.818	579.2	8428
Run 185	0.1887	0.8175	581.6	8425
Run 186	0.1894	0.817	583.9	8421
Run 187	0.1902	0.8165	586.3	8418
Run 188	0.191	0.816	588.7	8415
Run 189	0.1917	0.8155	591.1	8412
Run 190	0.1925	0.815	593.5	8409
Run 191	0.1932	0.8145	595.9	8406
Run 192	0.194	0.8141	598.3	8403
Run 193	0.1947	0.8136	600.7	8399
Run 194	0.1955	0.8131	603.1	8396
Run 195	0.1962	0.8126	605.5	8393
Run 196	0.197	0.8121	607.9	8390
Run 197	0.1977	0.8116	610.3	8387
Run 198	0.1985	0.8112	612.7	8384
Run 199	0.1992	0.8107	615.1	8381
Run 200	0.2	0.8102	617.5	8378

Parametric Table: pcm_1 varying m_dot_HTF@N=50

	$\dot{m}_{HTF}$ [kg/s]	$L_{pcm,1}$ [m]	$P_{drop,pcm,1}$ [Pa]	$C_{B,pcm,1}$
Run 1	0.05	0.505	33.01	10993
Run 2	0.05075	0.5035	33.42	10972
Run 3	0.05151	0.5019	33.83	10951
Run 4	0.05226	0.5004	34.24	10931
Run 5	0.05302	0.4988	34.65	10910
Run 6	0.05377	0.4974	35.06	10890
Run 7	0.05452	0.4959	35.47	10871
Run 8	0.05528	0.4944	35.88	10851
Run 9	0.05603	0.493	36.28	10832
Run 10	0.05678	0.4916	36.69	10814
Run 11	0.05754	0.4903	37.1	10795
Run 12	0.05829	0.4889	37.5	10777
Run 13	0.05905	0.4876	37.91	10759
Run 14	0.0598	0.4863	38.31	10741
Run 15	0.06055	0.485	38.71	10723
Run 16	0.06131	0.4837	39.12	10706
Run 17	0.06206	0.4824	39.52	10689
Run 18	0.06281	0.4812	39.92	10672
Run 19	0.06357	0.48	40.32	10656
Run 20	0.06432	0.4788	40.72	10639
Run 21	0.06508	0.4776	41.13	10623
Run 22	0.06583	0.4764	41.53	10607
Run 23	0.06658	0.4752	41.93	10591
Run 24	0.06734	0.4741	42.33	10576
Run 25	0.06809	0.473	42.72	10561
Run 26	0.06884	0.4719	43.12	10545
Run 27	0.0696	0.4708	43.52	10530
Run 28	0.07035	0.4697	43.92	10516
Run 29	0.07111	0.4686	44.32	10501
Run 30	0.07186	0.4676	44.72	10486
Run 31	0.07261	0.4665	45.11	10472
Run 32	0.07337	0.4655	45.51	10458
Run 33	0.07412	0.4645	45.91	10444
Run 34	0.07487	0.4635	46.3	10430
Run 35	0.07563	0.4625	46.7	10417
Run 36	0.07638	0.4615	47.1	10403
Run 37	0.07714	0.4606	47.49	10390
Run 38	0.07789	0.4596	47.89	10377
Run 39	0.07864	0.4587	48.28	10364
Run 40	0.0794	0.4577	48.68	10351
Run 41	0.08015	0.4568	49.07	10338
Run 42	0.0809	0.4559	49.47	10326
Run 43	0.08166	0.455	49.86	10313
Run 44	0.08241	0.4541	50.26	10301
Run 45	0.08317	0.4533	50.65	10289
Run 46	0.08392	0.4524	51.05	10277
Run 47	0.08467	0.4515	51.44	10265
Run 48	0.08543	0.4507	51.83	10253
Run 49	0.08618	0.4498	52.23	10241
Run 50	0.08693	0.449	52.62	10230

Parametric Table: pcm_1 varying m_dot_HTF@N=50

	$\dot{m}_{HTF}$ [kg/s]	$L_{pcm,1}$ [m]	$P_{drop,pcm,1}$ [Pa]	$C_{B,pcm,1}$
Run 51	0.08769	0.4482	53.01	10218
Run 52	0.08844	0.4474	53.41	10207
Run 53	0.0892	0.4466	53.8	10196
Run 54	0.08995	0.4458	54.19	10185
Run 55	0.0907	0.445	54.59	10174
Run 56	0.09146	0.4442	54.98	10163
Run 57	0.09221	0.4435	55.37	10152
Run 58	0.09296	0.4427	55.77	10141
Run 59	0.09372	0.4419	56.16	10131
Run 60	0.09447	0.4412	56.55	10120
Run 61	0.09523	0.4405	56.95	10110
Run 62	0.09598	0.4397	57.34	10100
Run 63	0.09673	0.439	57.73	10089
Run 64	0.09749	0.4383	58.13	10079
Run 65	0.09824	0.4376	58.52	10069
Run 66	0.09899	0.4369	58.91	10059
Run 67	0.09975	0.4362	59.3	10050
Run 68	0.1005	0.4355	59.7	10040
Run 69	0.1013	0.4348	60.09	10030
Run 70	0.102	0.4341	60.48	10021
Run 71	0.1028	0.4335	60.88	10011
Run 72	0.1035	0.4328	61.27	10002
Run 73	0.1043	0.4322	61.66	9993
Run 74	0.105	0.4315	62.05	9983
Run 75	0.1058	0.4309	62.45	9974
Run 76	0.1065	0.4302	62.84	9965
Run 77	0.1073	0.4296	63.23	9956
Run 78	0.108	0.429	63.63	9947
Run 79	0.1088	0.4283	64.02	9939
Run 80	0.1095	0.4277	64.41	9930
Run 81	0.1103	0.4271	64.81	9921
Run 82	0.1111	0.4265	65.2	9913
Run 83	0.1118	0.4259	65.59	9904
Run 84	0.1126	0.4253	65.99	9896
Run 85	0.1133	0.4247	66.38	9887
Run 86	0.1141	0.4242	66.78	9879
Run 87	0.1148	0.4236	67.17	9871
Run 88	0.1156	0.423	67.56	9862
Run 89	0.1163	0.4224	67.96	9854
Run 90	0.1171	0.4219	68.35	9846
Run 91	0.1178	0.4213	68.75	9838
Run 92	0.1186	0.4208	69.14	9830
Run 93	0.1193	0.4202	69.53	9823
Run 94	0.1201	0.4197	69.93	9815
Run 95	0.1209	0.4191	70.32	9807
Run 96	0.1216	0.4186	70.72	9799
Run 97	0.1224	0.4181	71.11	9792
Run 98	0.1231	0.4175	71.51	9784
Run 99	0.1239	0.417	71.9	9777
Run 100	0.1246	0.4165	72.3	9769
Run 101	0.1254	0.416	72.7	9762
Run 102	0.1261	0.4155	73.09	9755

Parametric Table: pcm_1 varying m_dot_HTF@N=50

	$\dot{m}_{HTF}$ [kg/s]	$L_{pcm,1}$ [m]	$P_{drop,pcm,1}$ [Pa]	$C_{B,pcm,1}$
Run 103	0.1269	0.415	73.49	9747
Run 104	0.1276	0.4145	73.88	9740
Run 105	0.1284	0.414	74.28	9733
Run 106	0.1291	0.4135	74.67	9726
Run 107	0.1299	0.413	75.07	9719
Run 108	0.1307	0.4125	75.47	9712
Run 109	0.1314	0.412	75.86	9705
Run 110	0.1322	0.4115	76.26	9698
Run 111	0.1329	0.411	76.66	9691
Run 112	0.1337	0.4106	77.05	9684
Run 113	0.1344	0.4101	77.45	9677
Run 114	0.1352	0.4096	77.85	9671
Run 115	0.1359	0.4092	78.25	9664
Run 116	0.1367	0.4087	78.64	9657
Run 117	0.1374	0.4083	79.04	9651
Run 118	0.1382	0.4078	79.44	9644
Run 119	0.1389	0.4074	79.84	9638
Run 120	0.1397	0.4069	80.24	9631
Run 121	0.1405	0.4065	80.64	9625
Run 122	0.1412	0.406	81.04	9619
Run 123	0.142	0.4056	81.43	9612
Run 124	0.1427	0.4052	81.83	9606
Run 125	0.1435	0.4047	82.23	9600
Run 126	0.1442	0.4043	82.63	9594
Run 127	0.145	0.4039	83.03	9587
Run 128	0.1457	0.4035	83.43	9581
Run 129	0.1465	0.4031	83.83	9575
Run 130	0.1472	0.4026	84.23	9569
Run 131	0.148	0.4022	84.63	9563
Run 132	0.1487	0.4018	85.03	9557
Run 133	0.1495	0.4014	85.44	9551
Run 134	0.1503	0.401	85.84	9545
Run 135	0.151	0.4006	86.24	9540
Run 136	0.1518	0.4002	86.64	9534
Run 137	0.1525	0.3998	87.04	9528
Run 138	0.1533	0.3994	87.44	9522
Run 139	0.154	0.399	87.85	9517
Run 140	0.1548	0.3987	88.25	9511
Run 141	0.1555	0.3983	88.65	9505
Run 142	0.1563	0.3979	89.05	9500
Run 143	0.157	0.3975	89.46	9494
Run 144	0.1578	0.3971	89.86	9489
Run 145	0.1585	0.3968	90.26	9483
Run 146	0.1593	0.3964	90.67	9478
Run 147	0.1601	0.396	91.07	9472
Run 148	0.1608	0.3956	91.48	9467
Run 149	0.1616	0.3953	91.88	9462
Run 150	0.1623	0.3949	92.29	9456
Run 151	0.1631	0.3946	92.69	9451
Run 152	0.1638	0.3942	93.1	9446
Run 153	0.1646	0.3938	93.5	9441
Run 154	0.1653	0.3935	93.91	9435

Parametric Table: pcm_1 varying m_dot_HTF@N=50

	$\dot{m}_{HTF}$ [kg/s]	$L_{pcm,1}$ [m]	$P_{drop,pcm,1}$ [Pa]	$C_{B,pcm,1}$
Run 155	0.1661	0.3931	94.31	9430
Run 156	0.1668	0.3928	94.72	9425
Run 157	0.1676	0.3924	95.13	9420
Run 158	0.1683	0.3921	95.53	9415
Run 159	0.1691	0.3918	95.94	9410
Run 160	0.1698	0.3914	96.35	9405
Run 161	0.1706	0.3911	96.75	9400
Run 162	0.1714	0.3907	97.16	9395
Run 163	0.1721	0.3904	97.57	9390
Run 164	0.1729	0.3901	97.98	9385
Run 165	0.1736	0.3897	98.39	9380
Run 166	0.1744	0.3894	98.8	9375
Run 167	0.1751	0.3891	99.2	9371
Run 168	0.1759	0.3888	99.61	9366
Run 169	0.1766	0.3884	100	9361
Run 170	0.1774	0.3881	100.4	9356
Run 171	0.1781	0.3878	100.8	9352
Run 172	0.1789	0.3875	101.3	9347
Run 173	0.1796	0.3872	101.7	9342
Run 174	0.1804	0.3869	102.1	9338
Run 175	0.1812	0.3865	102.5	9333
Run 176	0.1819	0.3862	102.9	9328
Run 177	0.1827	0.3859	103.3	9324
Run 178	0.1834	0.3856	103.7	9319
Run 179	0.1842	0.3853	104.1	9315
Run 180	0.1849	0.385	104.5	9310
Run 181	0.1857	0.3847	105	9306
Run 182	0.1864	0.3844	105.4	9301
Run 183	0.1872	0.3841	105.8	9297
Run 184	0.1879	0.3838	106.2	9292
Run 185	0.1887	0.3835	106.6	9288
Run 186	0.1894	0.3832	107	9284
Run 187	0.1902	0.3829	107.4	9279
Run 188	0.191	0.3826	107.9	9275
Run 189	0.1917	0.3824	108.3	9271
Run 190	0.1925	0.3821	108.7	9267
Run 191	0.1932	0.3818	109.1	9262
Run 192	0.194	0.3815	109.5	9258
Run 193	0.1947	0.3812	109.9	9254
Run 194	0.1955	0.3809	110.3	9250
Run 195	0.1962	0.3807	110.8	9246
Run 196	0.197	0.3804	111.2	9241
Run 197	0.1977	0.3801	111.6	9237
Run 198	0.1985	0.3798	112	9233
Run 199	0.1992	0.3796	112.4	9229
Run 200	0.2	0.3793	112.8	9225

Parametric Table: pcm_1 varying m_dot_HTF@N=150

	$\dot{m}_{HTF}$ [kg/s]	$L_{pcm,1}$ [m]	$C_{B,pcm,1}$	$P_{drop,pcm,1}$ [Pa]
Run 1	0.05	0.2077	12502	4.496
Run 2	0.05075	0.2072	12483	4.555
Run 3	0.05151	0.2067	12465	4.613
Run 4	0.05226	0.2062	12446	4.672
Run 5	0.05302	0.2057	12428	4.73
Run 6	0.05377	0.2052	12410	4.789
Run 7	0.05452	0.2047	12393	4.847
Run 8	0.05528	0.2043	12375	4.905
Run 9	0.05603	0.2038	12358	4.963
Run 10	0.05678	0.2033	12341	5.021
Run 11	0.05754	0.2029	12324	5.078
Run 12	0.05829	0.2024	12307	5.136
Run 13	0.05905	0.202	12290	5.193
Run 14	0.0598	0.2015	12273	5.25
Run 15	0.06055	0.2011	12257	5.308
Run 16	0.06131	0.2007	12241	5.365
Run 17	0.06206	0.2002	12225	5.422
Run 18	0.06281	0.1998	12209	5.479
Run 19	0.06357	0.1994	12193	5.535
Run 20	0.06432	0.199	12177	5.592
Run 21	0.06508	0.1985	12162	5.649
Run 22	0.06583	0.1981	12147	5.705
Run 23	0.06658	0.1977	12131	5.761
Run 24	0.06734	0.1973	12116	5.818
Run 25	0.06809	0.1969	12101	5.874
Run 26	0.06884	0.1965	12087	5.93
Run 27	0.0696	0.1962	12072	5.986
Run 28	0.07035	0.1958	12057	6.042
Run 29	0.07111	0.1954	12043	6.098
Run 30	0.07186	0.195	12029	6.154
Run 31	0.07261	0.1946	12014	6.21
Run 32	0.07337	0.1943	12000	6.265
Run 33	0.07412	0.1939	11986	6.321
Run 34	0.07487	0.1935	11973	6.376
Run 35	0.07563	0.1932	11959	6.432
Run 36	0.07638	0.1928	11945	6.487
Run 37	0.07714	0.1925	11932	6.542
Run 38	0.07789	0.1921	11919	6.598
Run 39	0.07864	0.1918	11905	6.653
Run 40	0.0794	0.1914	11892	6.708
Run 41	0.08015	0.1911	11879	6.763
Run 42	0.0809	0.1907	11866	6.818
Run 43	0.08166	0.1904	11853	6.873
Run 44	0.08241	0.1901	11841	6.928
Run 45	0.08317	0.1897	11828	6.982
Run 46	0.08392	0.1894	11816	7.037
Run 47	0.08467	0.1891	11803	7.092
Run 48	0.08543	0.1887	11791	7.146
Run 49	0.08618	0.1884	11779	7.201
Run 50	0.08693	0.1881	11766	7.255
Run 51	0.08769	0.1878	11754	7.31

Parametric Table: pcm_1 varying m_dot_HTF@N=150

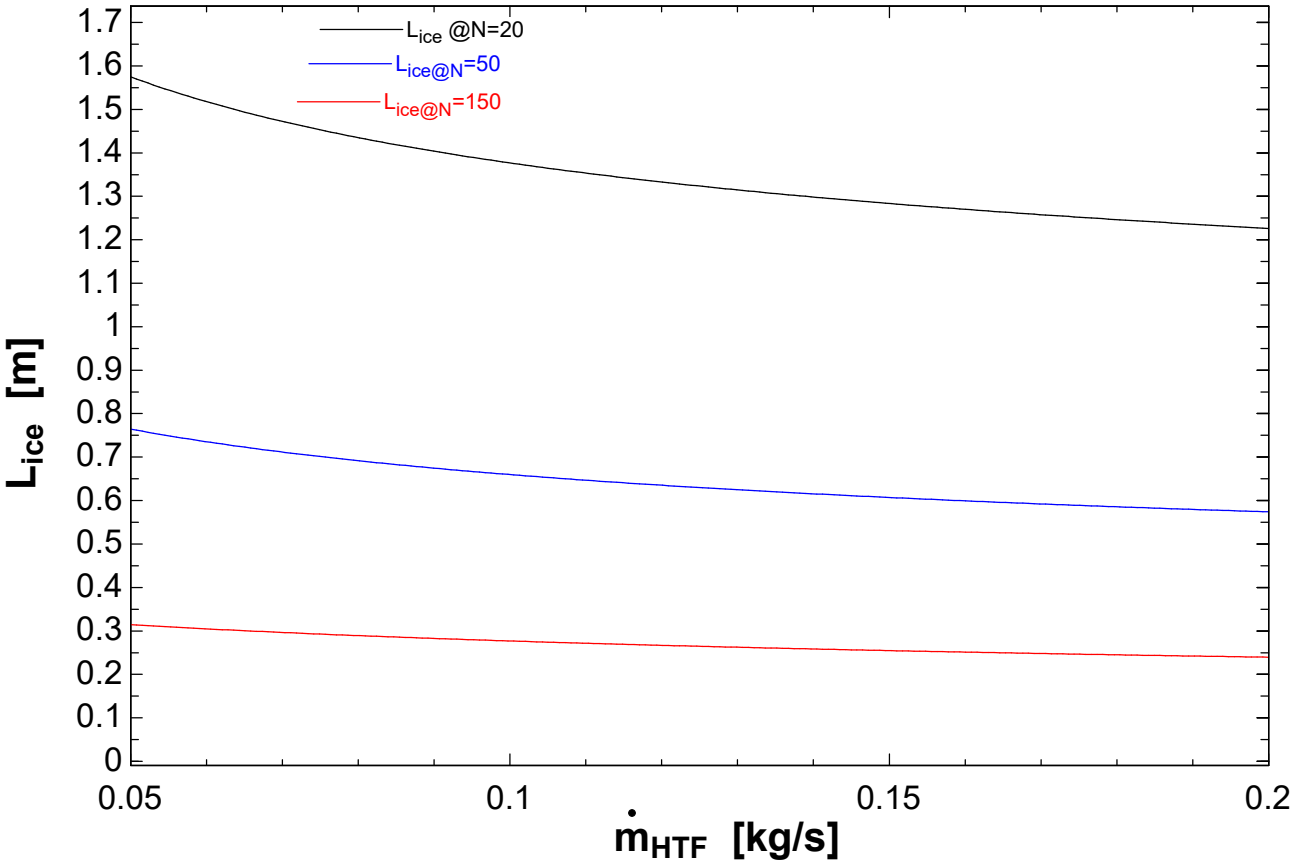
	$\dot{m}_{HTF}$ [kg/s]	$L_{pcm,1}$ [m]	$C_{B,pcm,1}$	$P_{drop,pcm,1}$ [Pa]
Run 52	0.08844	0.1875	11742	7.364
Run 53	0.0892	0.1872	11731	7.419
Run 54	0.08995	0.1869	11719	7.473
Run 55	0.0907	0.1866	11707	7.527
Run 56	0.09146	0.1863	11695	7.581
Run 57	0.09221	0.186	11684	7.636
Run 58	0.09296	0.1857	11672	7.69
Run 59	0.09372	0.1854	11661	7.744
Run 60	0.09447	0.1851	11650	7.798
Run 61	0.09523	0.1848	11639	7.852
Run 62	0.09598	0.1845	11628	7.906
Run 63	0.09673	0.1842	11617	7.96
Run 64	0.09749	0.1839	11606	8.014
Run 65	0.09824	0.1837	11595	8.068
Run 66	0.09899	0.1834	11584	8.121
Run 67	0.09975	0.1831	11573	8.175
Run 68	0.1005	0.1828	11563	8.229
Run 69	0.1013	0.1825	11552	8.283
Run 70	0.102	0.1823	11542	8.336
Run 71	0.1028	0.182	11531	8.39
Run 72	0.1035	0.1817	11521	8.444
Run 73	0.1043	0.1815	11511	8.497
Run 74	0.105	0.1812	11500	8.551
Run 75	0.1058	0.181	11490	8.604
Run 76	0.1065	0.1807	11480	8.658
Run 77	0.1073	0.1804	11470	8.711
Run 78	0.108	0.1802	11460	8.765
Run 79	0.1088	0.1799	11450	8.818
Run 80	0.1095	0.1797	11440	8.872
Run 81	0.1103	0.1794	11431	8.925
Run 82	0.1111	0.1792	11421	8.978
Run 83	0.1118	0.1789	11411	9.032
Run 84	0.1126	0.1787	11402	9.085
Run 85	0.1133	0.1784	11392	9.138
Run 86	0.1141	0.1782	11383	9.191
Run 87	0.1148	0.178	11374	9.245
Run 88	0.1156	0.1777	11364	9.298
Run 89	0.1163	0.1775	11355	9.351
Run 90	0.1171	0.1773	11346	9.404
Run 91	0.1178	0.177	11337	9.458
Run 92	0.1186	0.1768	11328	9.511
Run 93	0.1193	0.1766	11319	9.564
Run 94	0.1201	0.1763	11310	9.617
Run 95	0.1209	0.1761	11301	9.67
Run 96	0.1216	0.1759	11292	9.723
Run 97	0.1224	0.1757	11283	9.776
Run 98	0.1231	0.1754	11274	9.829
Run 99	0.1239	0.1752	11266	9.882
Run 100	0.1246	0.175	11257	9.935
Run 101	0.1254	0.1748	11248	9.988
Run 102	0.1261	0.1746	11240	10.04
Run 103	0.1269	0.1743	11231	10.09

Parametric Table: pcm_1 varying m_dot_HTF@N=150

	$\dot{m}_{HTF}$ [kg/s]	$L_{pcm,1}$ [m]	$C_{B,pcm,1}$	$P_{drop,pcm,1}$ [Pa]
Run 104	0.1276	0.1741	11223	10.15
Run 105	0.1284	0.1739	11215	10.2
Run 106	0.1291	0.1737	11206	10.25
Run 107	0.1299	0.1735	11198	10.31
Run 108	0.1307	0.1733	11190	10.36
Run 109	0.1314	0.1731	11181	10.41
Run 110	0.1322	0.1729	11173	10.47
Run 111	0.1329	0.1727	11165	10.52
Run 112	0.1337	0.1725	11157	10.57
Run 113	0.1344	0.1723	11149	10.62
Run 114	0.1352	0.1721	11141	10.68
Run 115	0.1359	0.1719	11133	10.73
Run 116	0.1367	0.1717	11125	10.78
Run 117	0.1374	0.1715	11118	10.84
Run 118	0.1382	0.1713	11110	10.89
Run 119	0.1389	0.1711	11102	10.94
Run 120	0.1397	0.1709	11094	10.99
Run 121	0.1405	0.1707	11087	11.05
Run 122	0.1412	0.1705	11079	11.1
Run 123	0.142	0.1703	11072	11.15
Run 124	0.1427	0.1701	11064	11.21
Run 125	0.1435	0.1699	11057	11.26
Run 126	0.1442	0.1697	11049	11.31
Run 127	0.145	0.1696	11042	11.36
Run 128	0.1457	0.1694	11034	11.42
Run 129	0.1465	0.1692	11027	11.47
Run 130	0.1472	0.169	11020	11.52
Run 131	0.148	0.1688	11012	11.58
Run 132	0.1487	0.1686	11005	11.63
Run 133	0.1495	0.1685	10998	11.68
Run 134	0.1503	0.1683	10991	11.73
Run 135	0.151	0.1681	10984	11.79
Run 136	0.1518	0.1679	10977	11.84
Run 137	0.1525	0.1678	10970	11.89
Run 138	0.1533	0.1676	10963	11.95
Run 139	0.154	0.1674	10956	12
Run 140	0.1548	0.1672	10949	12.05
Run 141	0.1555	0.1671	10942	12.11
Run 142	0.1563	0.1669	10935	12.16
Run 143	0.157	0.1667	10928	12.21
Run 144	0.1578	0.1666	10922	12.26
Run 145	0.1585	0.1664	10915	12.32
Run 146	0.1593	0.1662	10908	12.37
Run 147	0.1601	0.1661	10902	12.42
Run 148	0.1608	0.1659	10895	12.48
Run 149	0.1616	0.1657	10888	12.53
Run 150	0.1623	0.1656	10882	12.58
Run 151	0.1631	0.1654	10875	12.63
Run 152	0.1638	0.1652	10869	12.69
Run 153	0.1646	0.1651	10862	12.74
Run 154	0.1653	0.1649	10856	12.79
Run 155	0.1661	0.1648	10849	12.85

Parametric Table: pcm_1 varying m_dot_HTF@N=150

	$\dot{m}_{HTF}$ [kg/s]	$L_{pcm,1}$ [m]	$C_{B,pcm,1}$	$P_{drop,pcm,1}$ [Pa]
Run 156	0.1668	0.1646	10843	12.9
Run 157	0.1676	0.1644	10837	12.95
Run 158	0.1683	0.1643	10830	13.01
Run 159	0.1691	0.1641	10824	13.06
Run 160	0.1698	0.164	10818	13.11
Run 161	0.1706	0.1638	10811	13.16
Run 162	0.1714	0.1637	10805	13.22
Run 163	0.1721	0.1635	10799	13.27
Run 164	0.1729	0.1634	10793	13.32
Run 165	0.1736	0.1632	10787	13.38
Run 166	0.1744	0.1631	10781	13.43
Run 167	0.1751	0.1629	10775	13.48
Run 168	0.1759	0.1628	10769	13.54
Run 169	0.1766	0.1626	10763	13.59
Run 170	0.1774	0.1625	10757	13.64
Run 171	0.1781	0.1623	10751	13.7
Run 172	0.1789	0.1622	10745	13.75
Run 173	0.1796	0.162	10739	13.8
Run 174	0.1804	0.1619	10733	13.86
Run 175	0.1812	0.1617	10727	13.91
Run 176	0.1819	0.1616	10722	13.96
Run 177	0.1827	0.1615	10716	14.02
Run 178	0.1834	0.1613	10710	14.07
Run 179	0.1842	0.1612	10704	14.12
Run 180	0.1849	0.161	10699	14.18
Run 181	0.1857	0.1609	10693	14.23
Run 182	0.1864	0.1608	10687	14.28
Run 183	0.1872	0.1606	10682	14.34
Run 184	0.1879	0.1605	10676	14.39
Run 185	0.1887	0.1603	10670	14.44
Run 186	0.1894	0.1602	10665	14.5
Run 187	0.1902	0.1601	10659	14.55
Run 188	0.191	0.1599	10654	14.6
Run 189	0.1917	0.1598	10648	14.66
Run 190	0.1925	0.1597	10643	14.71
Run 191	0.1932	0.1595	10638	14.76
Run 192	0.194	0.1594	10632	14.82
Run 193	0.1947	0.1593	10627	14.87
Run 194	0.1955	0.1591	10621	14.92
Run 195	0.1962	0.159	10616	14.98
Run 196	0.197	0.1589	10611	15.03
Run 197	0.1977	0.1588	10605	15.08
Run 198	0.1985	0.1586	10600	15.14
Run 199	0.1992	0.1585	10595	15.19
Run 200	0.2	0.1584	10590	15.24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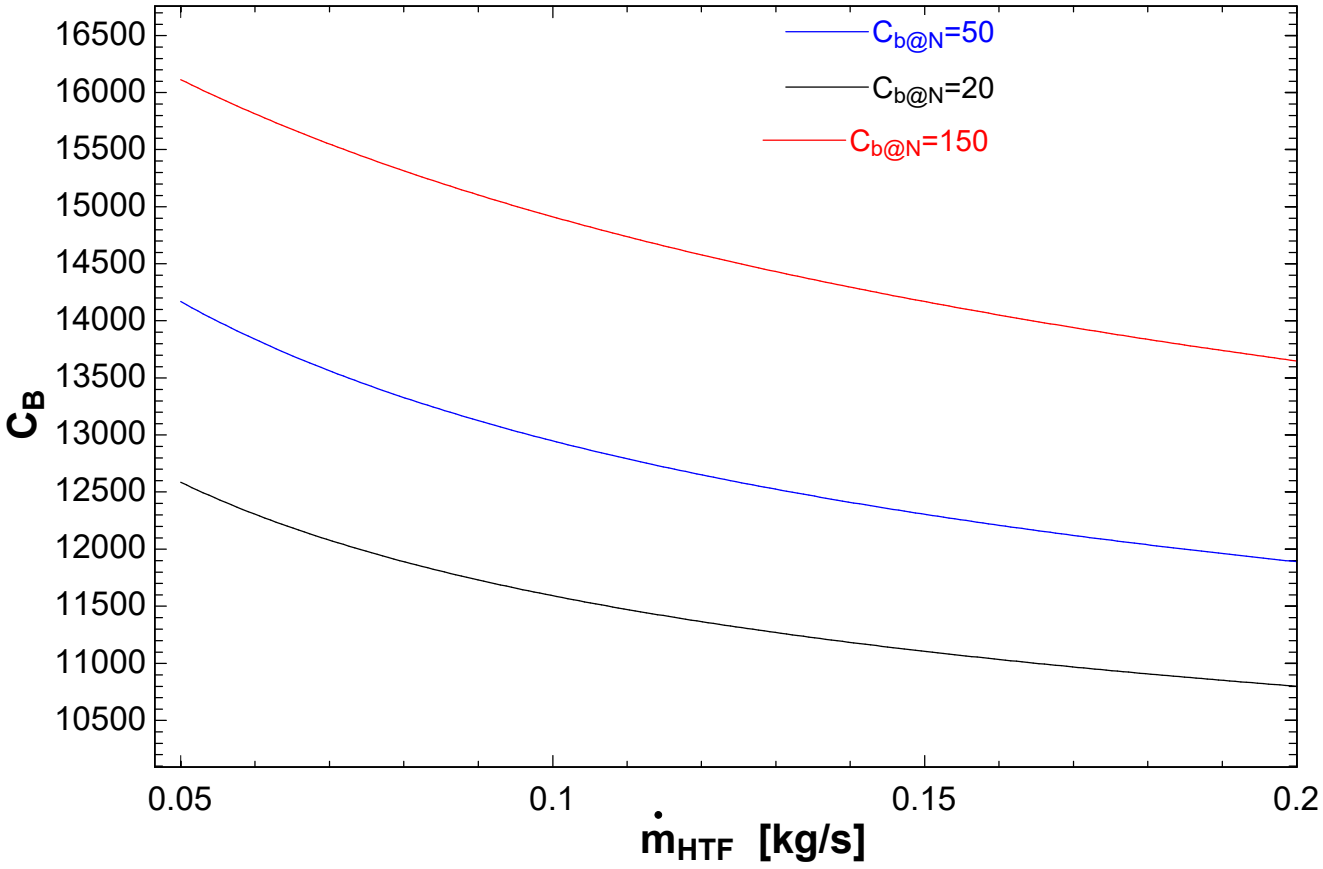
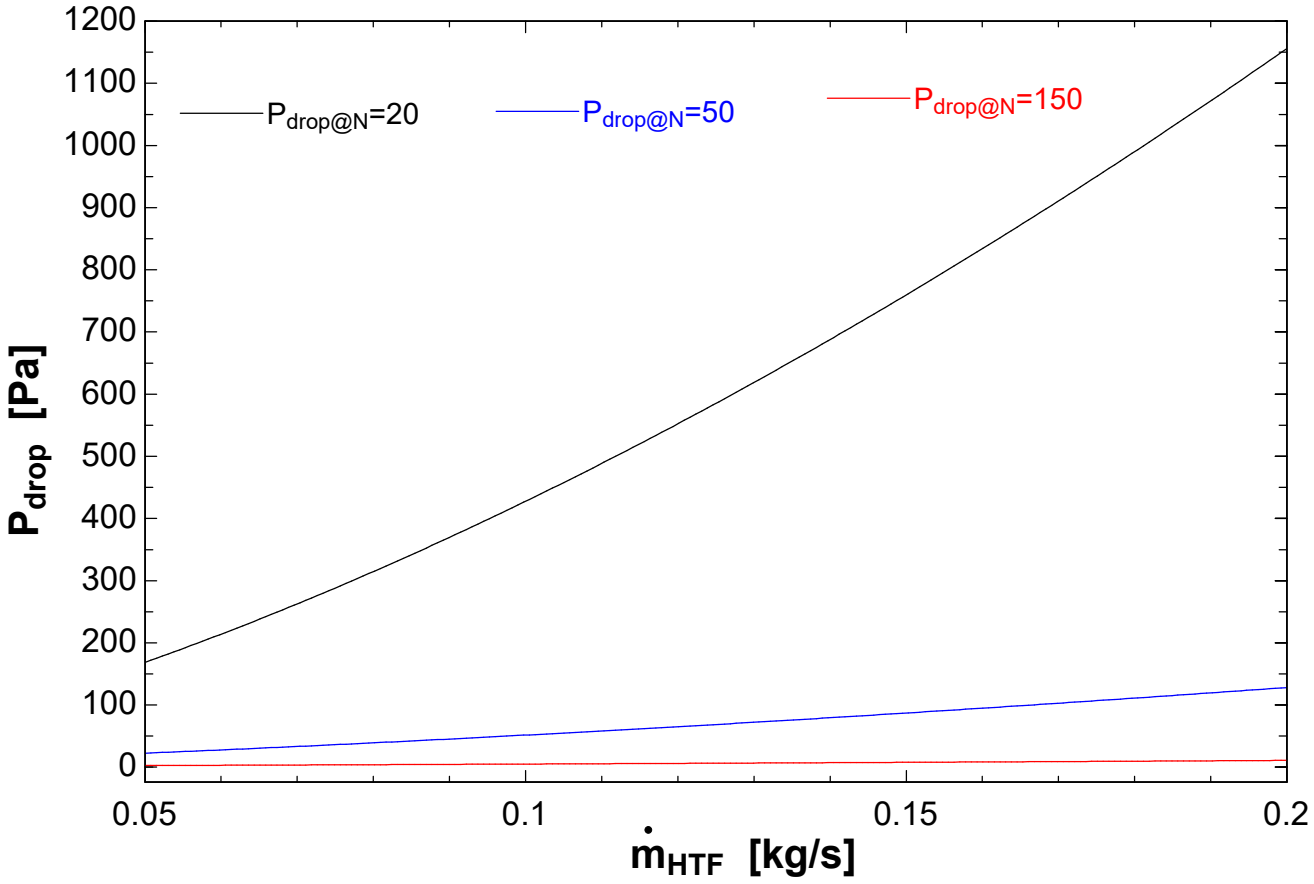
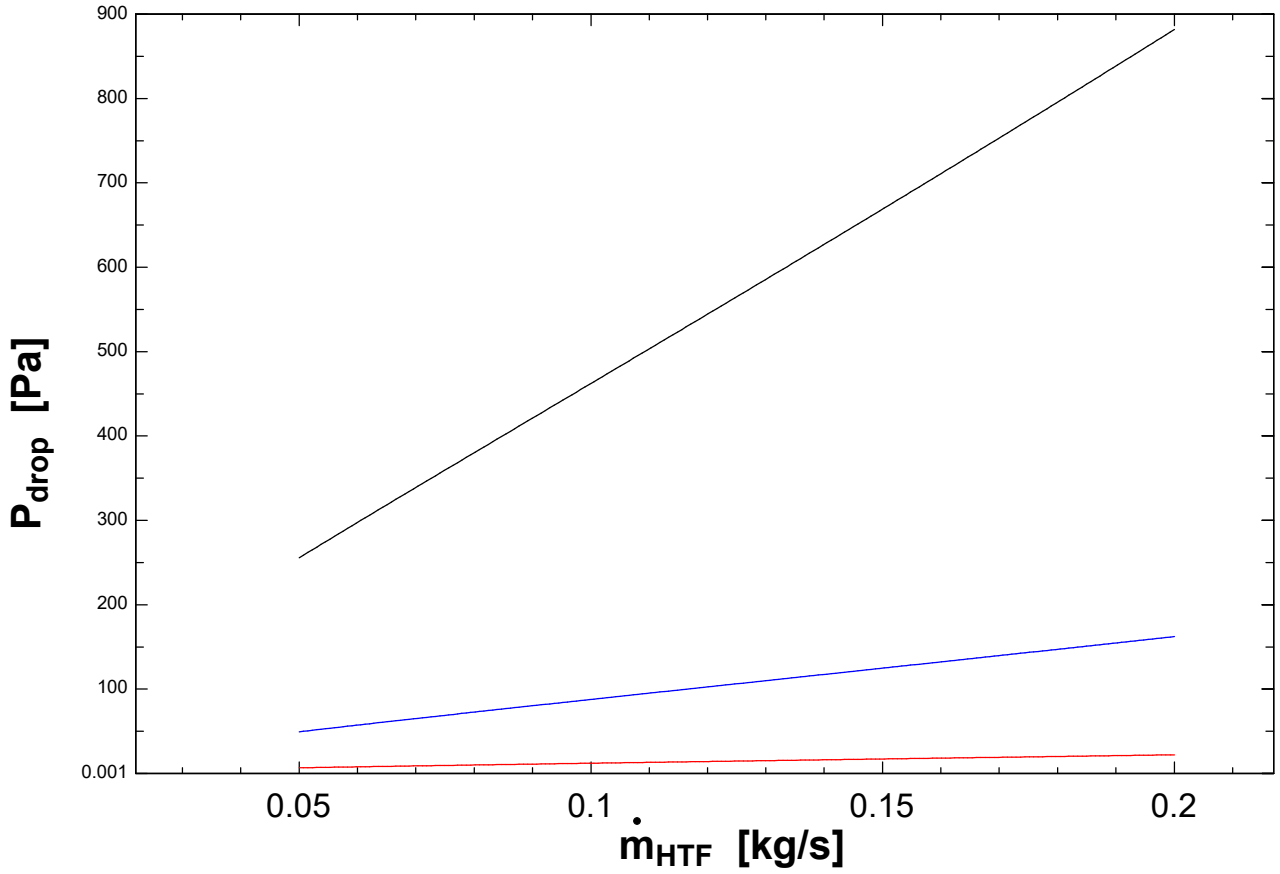
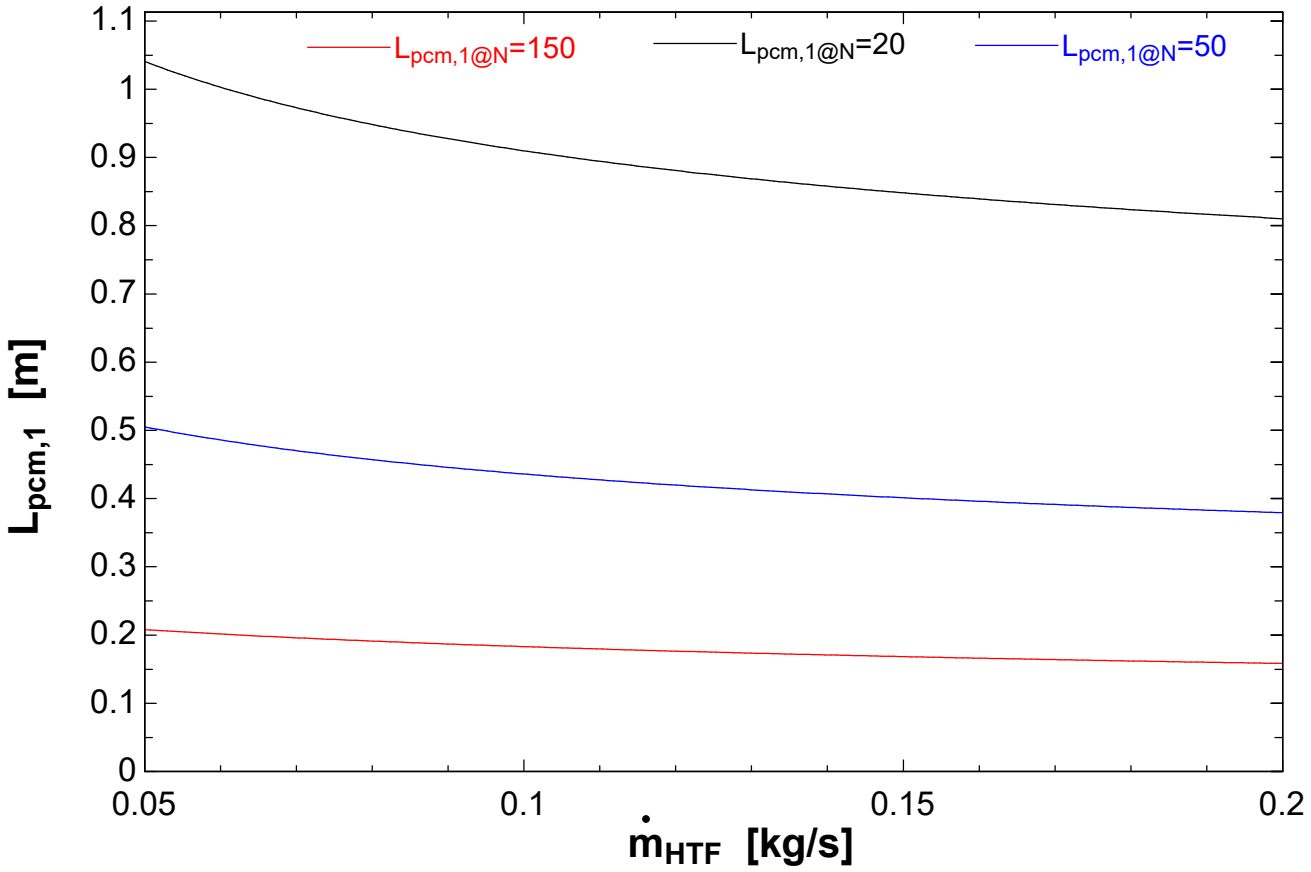
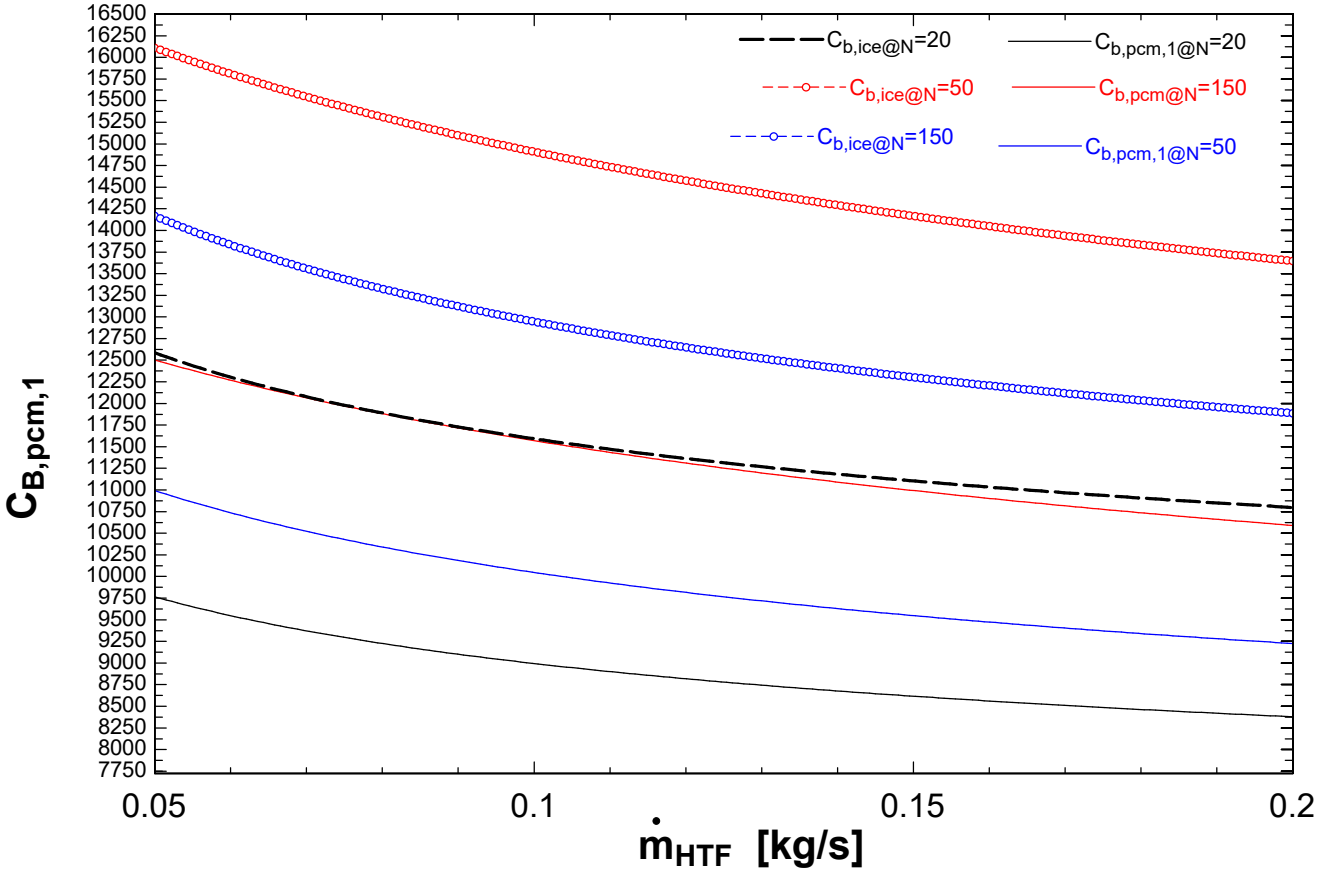
L_ice@N=50
L_ice@N=150
L_ice [m]
ṁ_HTF [kg/s]
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
0.05
0.1
0.15
0.2







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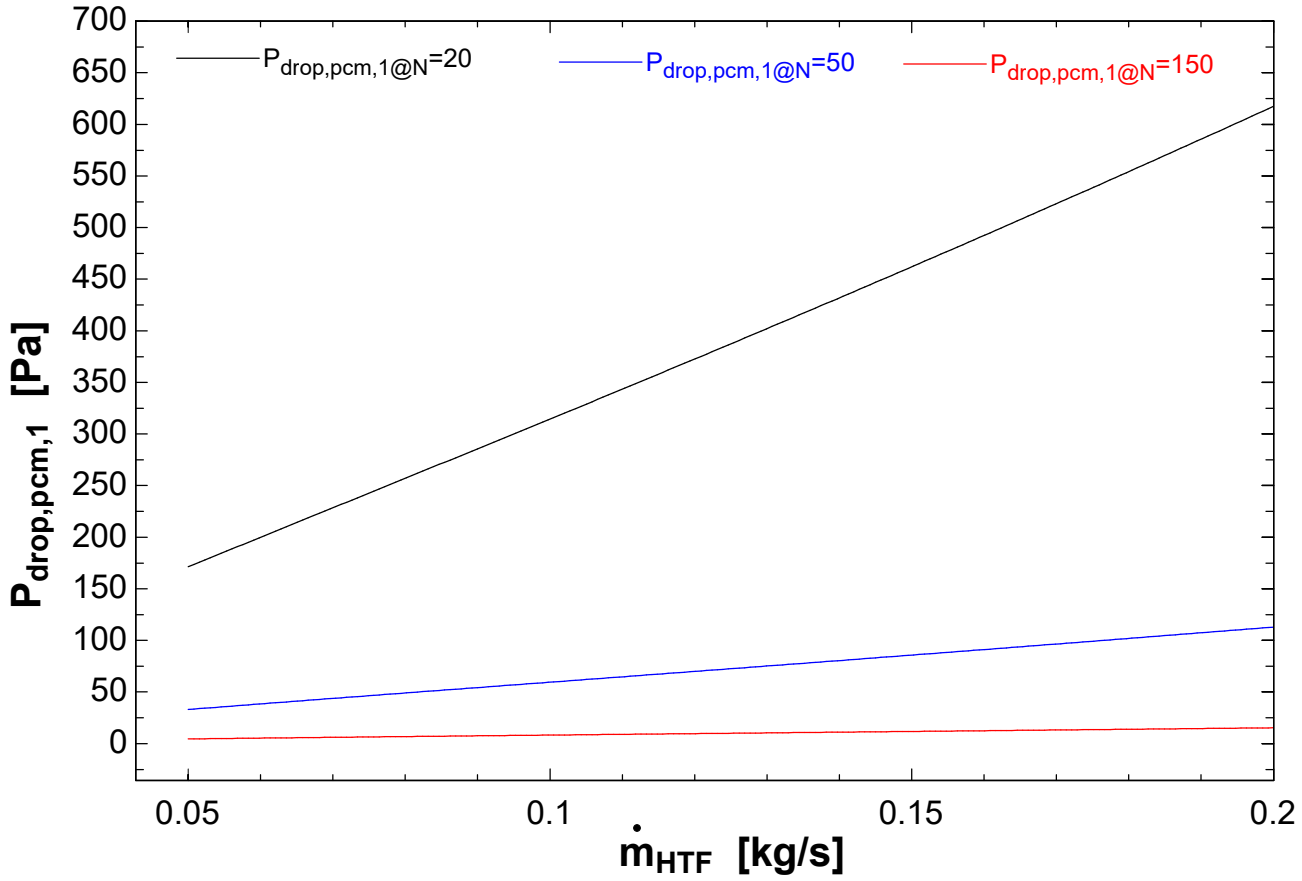
$C_{b,ice@N=50}$
$C_{b,pcm@N=150}$
$C_{b,ice@N=150}$
$C_{b,pcm,1@N=50}$
$C_{B,pcm,1}$
$\dot{m}_{HTF}$ [kg/s]
16500
16250
16000
15750
15500
15250
15000
14750
14500
14250
14000
13750
13500
13250
13000
12750
12500
12250
12000
11750
11500
11250
11000
10750
10500
10250
10000
9750
9500
9250
9000
8750
8500
8250
8000
7750
0.05
0.1
0.15
0.2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P_drop,pcm,1@N=50
P_drop,pcm,1@N=150
P_drop,pcm,1 [Pa]
ṁ_HTF [kg/s]
700
650
600
550
500
450
400
350
300
250
200
150
100
50
0
0.05
0.1
0.15
0.2