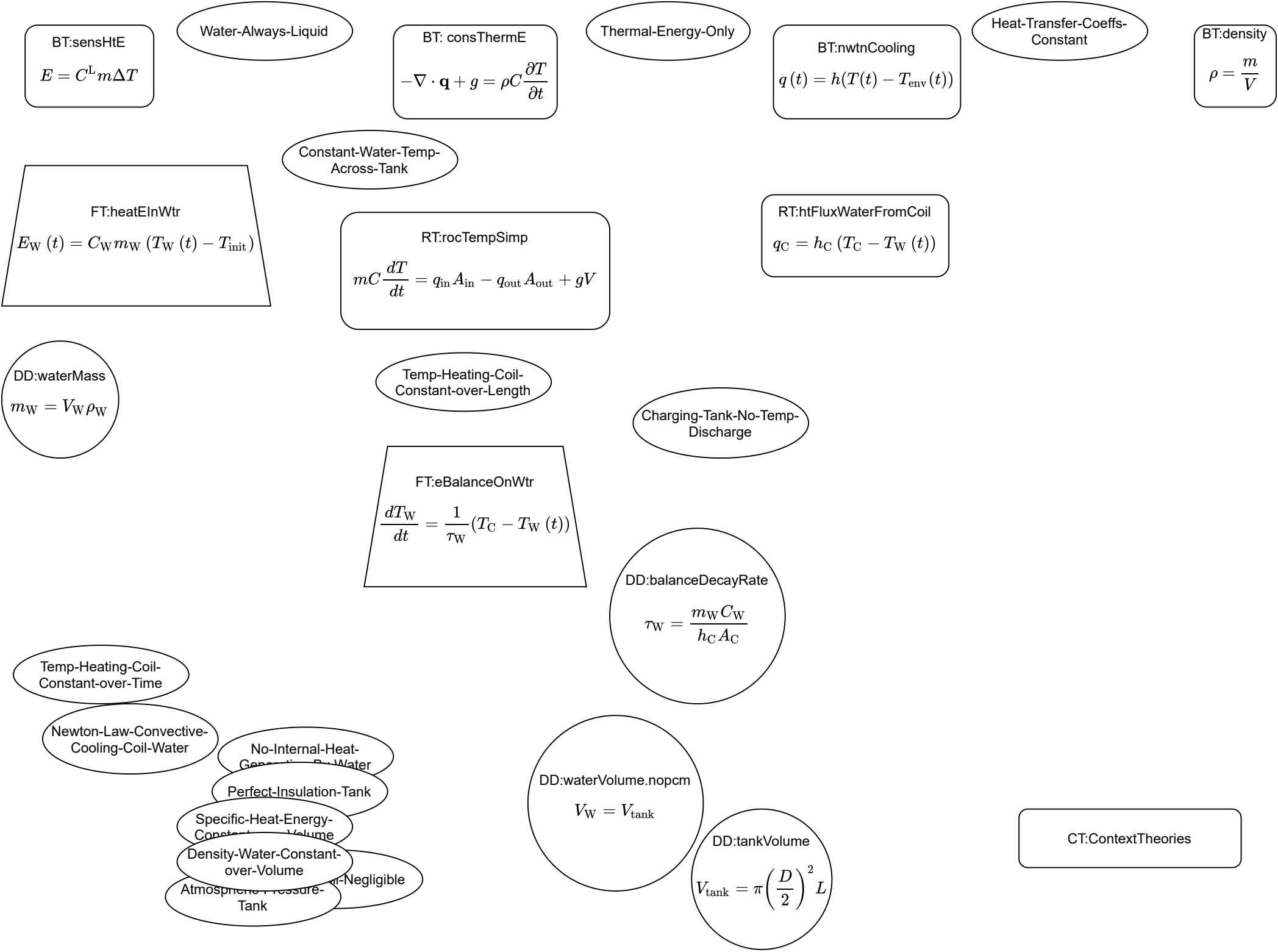
BT:sensHtE
$E = C^{\mathrm{L}} m \Delta T$
Water-Always-Liquid
BT: consThermE
$-\nabla \cdot \mathbf{q} + g = \rho C \frac{\partial T}{\partial t}$
Thermal-Energy-Only
BT:nwtnCooling
$q(t) = h(T(t) - T_{\mathrm{env}}(t))$
Heat-Transfer-Coeffs-Constant
BT:density
$\rho = \frac{m}{V}$
Constant-Water-Temp-Across-Tank
FT:heatEInWtr
$E_{\mathrm{W}}(t) = C_{\mathrm{W}} m_{\mathrm{W}} (T_{\mathrm{W}}(t) - T_{\mathrm{init}})$
RT:rocTempSimp
$mC \frac{dT}{dt} = q_{\mathrm{in}} A_{\mathrm{in}} - q_{\mathrm{out}} A_{\mathrm{out}} + gV$
RT:htFluxWaterFromCoil
$q_{\mathrm{C}} = h_{\mathrm{C}} (T_{\mathrm{C}} - T_{\mathrm{W}}(t))$
DD:waterMass
$m_{\mathrm{W}} = V_{\mathrm{W}} \rho_{\mathrm{W}}$
Temp-Heating-Coil-Constant-over-Length
Charging-Tank-No-Temp-Discharge
FT:eBalanceOnWtr
$\frac{dT_{\mathrm{W}}}{dt} = \frac{1}{\tau_{\mathrm{W}}}(T_{\mathrm{C}} - T_{\mathrm{W}}(t))$
DD:balanceDecayRate
$\tau_{\mathrm{W}} = \frac{m_{\mathrm{W}} C_{\mathrm{W}}}{h_{\mathrm{C}} A_{\mathrm{C}}}$
Temp-Heating-Coil-Constant-over-Time
Newton-Law-Convective-Cooling-Coil-Water
No-Internal-Heat-Gener
Perfect-Insulation-Tank
Specific-Heat-Energy-Cons
Density-Water-Constant-over-Volume
Atmospheric Pressure-Tank
DD:waterVolume.nopcm
$V_{\mathrm{W}} = V_{\mathrm{tank}}$
DD:tankVolume
$V_{\mathrm{tank}} = \pi \left(\frac{D}{2}\right)^2 L$
CT:ContextTheories