$$\frac{dT_N}{dt} = (1-\alpha_N)S - \epsilon T_N^4 + D(T_E - T_N)$$

$$\frac{dT_E}{dt} = (1-\alpha_s)S - \epsilon T_S^4 + D(2T_E - T_N - T_S)$$

$$\frac{dT_S}{dt} = (1-\alpha_E)S - \epsilon T_E^4 - D(T_E - T_S)$$