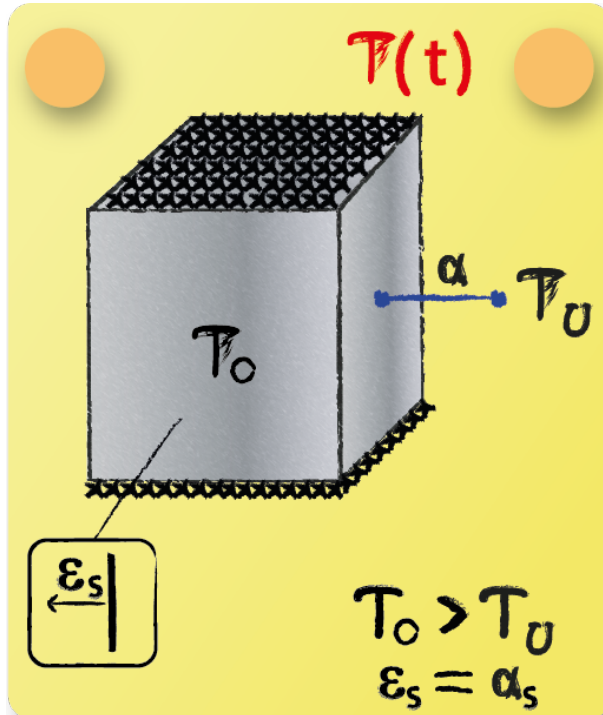


Energy Balance: Task 6



Choose the transient energy balance for the cube.

1



The temporal change of the cube's internal energy is governed by outgoing heat fluxes due to radiation and convection at 4 of the 6 cube's faces as well as an ingoing heat flux due to ambient radiation.

$$\frac{\partial U}{\partial t} = \alpha_s \frac{2}{3} A_W \sigma T_u^4 - \epsilon_s \frac{2}{3} A_W \sigma T^4 - \alpha \frac{2}{3} A_W (T - T_u)$$