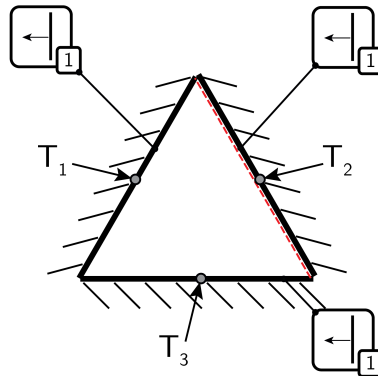




Surface Brightness 17

Determine the surface brightness \dot{Q}_2 . Use view factors and other surface brightnesses whenever possible.



Definition of the surface brightness:

$$\dot{Q}_2 = \dot{Q}_{2,\epsilon} + \cancel{\dot{Q}_{2,\rho}}^0 + \cancel{\dot{Q}_{2,\tau}}^0$$

Defining the emitted, reflected and transmitted radiation:

The emitted radiation of a black body radiator can be stated as:

$$\dot{Q}_{2,\epsilon} = \cancel{\epsilon_2}^1 \sigma A_2 T_2^4$$

Inserting and rewriting:

$$\Rightarrow \dot{Q}_2 = \sigma A_2 T_2^4$$