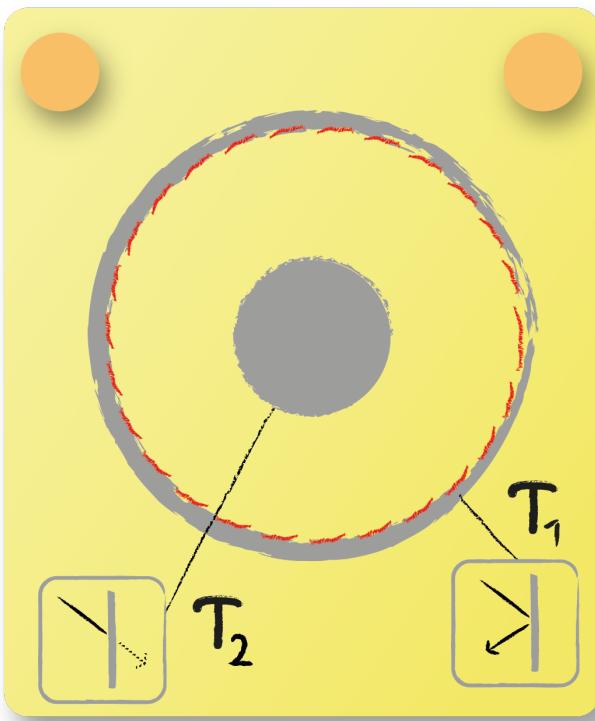


Surface Brightness: Task 15



The image shows a grey body 1 enclosing another grey body 2. As body 1 is not transmitting, body 2 is not reflecting arriving radiation.

1



$$\dot{Q}_1 = \sigma \cdot \epsilon_1 \cdot A_1 \cdot T_1^4 + \rho_1 \cdot \dot{Q}_2 + \rho_1 \cdot \phi_{1,1} \cdot \dot{Q}_1$$

2



The surface brightness of body 2 is the sum of its emission and reflection. In this case the reflection is composed of incoming radiation from body 2 such as from itself. The fraction of the self seeing radiation is expressed by the view factor. In consequence the surface brightness \dot{Q}_1 appears on both sides of the equation.