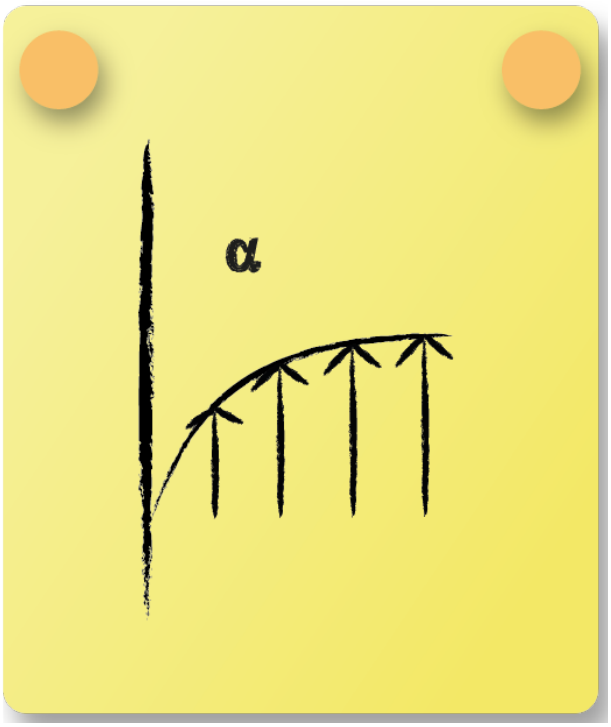
Lecture 7 - Question 2



Which statements are true regarding the heat transfer coefficient?

The heat transfer coefficient is used to characterize convective heat transfer. It is defined as the proportionality constant α between specific heat flux and temperature difference.

$$\dot{q}''_{\mathrm{W}} = \alpha(T_{\mathrm{W}} - T_{\mathrm{A}})$$

As the direction of heat transfer is given by the temperature gradient the heat transfer coefficient is always positive. It's value depends on the fluid and flow properties such as velocity and laminar/turbulent state and is often based on empirical investigations.