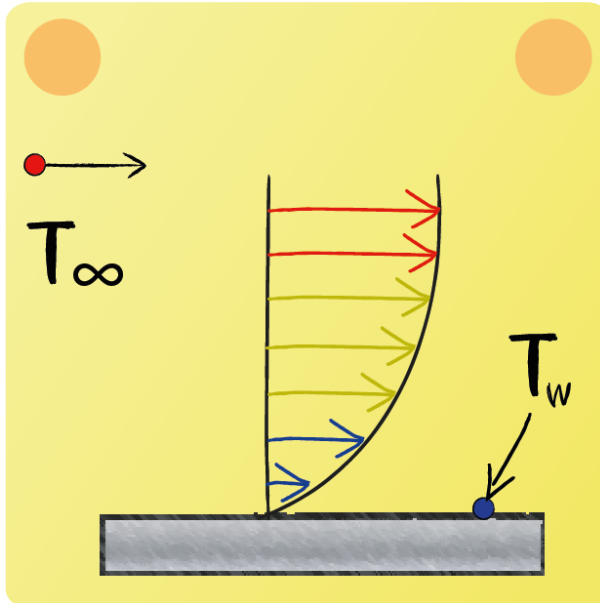


Lecture 1 - Question 4



What does the heat transfer coefficient α describe?

The rate of heat transfer between a solid surface and a fluid per unit surface area per unit temperature difference.



The convection heat transfer coefficient α is not a property of the fluid. It is a system parameter whose value depends on all the variables influencing convection such as the surface geometry, the nature of fluid motion, the properties of the fluid, and the bulk fluid velocity. To determine its value one needs to solve the entire flow problem. Often it is determined experimentally.