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Innovative Strategy to study of external forced convection in a plate by means of a Theoretical-Practical Guide

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Abstract : For the realization of the mechanical and thermal design of many engineering systems it is important to understand the heat transfer phenomena, especially the phenomenon of external forced convection. This work aims to provide to students with a theoretical – practical tool to understand some cases study related to this topic, where they reconstruct an equipment to model the fluid flow and heat transfer under low Reynolds numbers in order to determine the behavior of the forced convection. Similarly, a simulation was performed using the Solid Works engineering software, recreating the conditions that were used for the experimental study. In order to measure the efficiency of the innovative tool developed, a test was conducted in a heat transfer intersemestral course at the Universidad del Atlántico, allowing a statistical analysis based on a t-test to measure the performance that each student obtained in the tests carried out, according to an evaluation matrix.

Keywords: external forced convection, Theoretical-Practical Guide, plate.

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