Impact of Air Conditioning on Airflow in the Nuclear Laboratory at IIT Bombay

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Abstract

This case study explores the effects of air conditioning on airflow dynamics within a nuclear laboratory at the Indian Institute of Technology Bombay (IIT Bombay). The primary objective is to evaluate how air conditioning and the position of an extra window influence factors such as ventilation rates and the duration air remains within the lab environment. Through analyzing the current ventilation setups and integrating air conditioning systems, the study aims to enhance environmental conditions critical for nuclear research and ensure adherence to safety protocols, with a particular emphasis on minimizing air residence time.

References :

[1] Turbulence Modelling in OpenFOAM - Additional Reading Material

[2] Effect of Ceiling Fan on the Ventilation of Nuclear Lab, IIT Bombay: Soham Sachin Purohit Indian Institute of Technology Bombay

[3] OpenFoam Documentation - www.openfoam.com