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Title: A case study on the air distribution in an operating room at Sarawak General Hospital Heart Centre (SGHHC) in Malaysia
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Abstract: A fieldwork measurement and simulation studies were carried out at the operating room (OR)-5, Sarawak General Hospital Heart Centre (SGHHC). This hospital is located in East Malaysia and was commissioned in January 2011. The air condition at the inlets and several other locations in the room are measured for the validation of the computational fluid dynamics simulation. From the results, it is noted that the obstruction and heat dissipation effects from the surgical light should not be disregarded. The combination of both effects results in trapped heat in the region below the surgical light. Under the same total flow volume for the OR, it is observed that the OR with the uneven inlet velocities performs better than the OR with an even velocity distribution at the inlets. On the question of reducing the ventilation air consumption, it is proven that a reduction of air flow rate by 15% (to the average inlet air velocity of 0.3m/s) is possible in the OR.
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