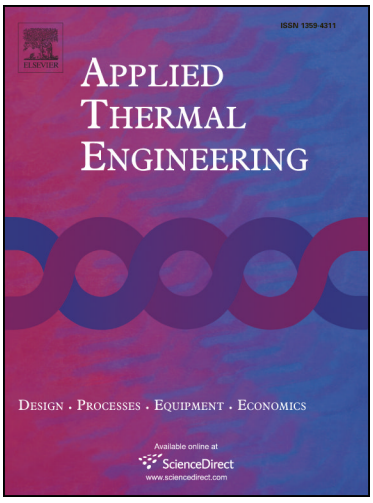

A new natural draft dry cooling tower with improved thermal performance during windy condition

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A new natural draft dry cooling tower with improved thermal performance during windy condition

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Abstract:

A new natural draft dry cooling tower with better cooling efficiency during the windy condition has been introduced. A numerical method has been used to simulate and predict the thermo-hydraulic performance of the proposed cooling tower in comparison to the usual cooling tower. The details of the flow field and also outlet water temperature have been presented comparatively. The obtained results demonstrated that the thermal performance of the new cooling tower was always higher than the usual one at the wind velocities greater than 3m/s. The best and the most important characteristics of the new cooling tower is the independence of its improved thermal performance to the wind direction; the main deficiency that the previous proposals suffer from.

Keywords: Natural draft dry cooling tower, Cooling efficiency, Improved thermal performance, wind direction