

# STUDY OF A COUNTERFLOW WET COOLING TOWER PART II: EXERGY ANALYSIS

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## ABSTRACT

*The paper complements the previous paper with an exergy analysis. The amount of exergy supplied by water is larger than that absorbed by air, because the system produces entropy. To depict the utilizable exergy between water and air, exergy of each working fluid along the tower are presented. The water exergy decreases continuously from top to bottom. On the other hand, air exergy is expressed in terms of convective and evaporative heat transfer. Exergy of air via convective heat transfer initially loses at inlet and slightly recovers along the flow before leaving the tower. However, exergy of air via evaporative heat transfer is generally high and able to consume exergy supplied by water. Exergy destruction is defined as the difference between water exergy change and air exergy change. The lowest exergy destruction is located at the top of the tower.*

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