

Analysis of Heat Transfer Coefficient of the Drying Process in Paper Plants

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The objective of the present study is to develop a dependable model for the drying process in paper production plants. In this study a model for the drying process in paper production plants was developed based on the mass and heat balances around drying cycles. Relationships for the heat transfer coefficients between the web and the air as well as between the drying cylinder and the web were extracted from the closed-loop plant operation data. It was found that the heat transfer coefficients could be represented effectively in terms of moisture content, basis weight and reel velocity. The effectiveness of the proposed model was illustrated through numerical simulations. From the comparison with the operation data, the proposed model represents the paper plant being considered with sufficient accuracy.