

Simplified Modelling of Tandem Cold Rolling

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Abstract: In this paper, a calculation technique for solving the problem of regulating inter-stand tension in a tandem cold rolling is proposed. Based on the slices method, the proposed technique develops a computational model for a single stand, and then generalizes it for five stands. The effectiveness of this technique is evaluated using experimental data acquired from tandem rolling mill of IMittal steel complex of El-Hadjar-Algeria. By taking into account the elasticity of the rolls and using Newton's method; the developed model can be used to calculate, successfully, the tensions correction of the five stands. Compared with the LAM3 software, the obtained results indicated that the proposed technique is effective and can be used to produce better performance of tandem cold rolling.

Keywords : modelling, tandem cold rolling, slices method, elasticity, Newton's method.