

论文与报告

动态系统最优化理论与自适应算法在轧钢中的应用

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摘要

本文就自行研制的轧机计算机厚度控制系统,应用动态规划、随机最优控制理论与自适应算法,在轧制规程和厚度分配的最优化计算、轧制规程在线修正与自动厚度控制的改进算法几方面进行了研究,使轧机的厚度控制精度有了显著的提高.应用结果表明,普碳钢卷板的纵向同板差精度 $\leq 80\mu\text{m}$,命中目标厚度精度为 $\pm 0.1\text{mm}$.

关键词 [轧机](#) [厚度控制](#) [动态系统](#) [最优化](#)

分类号

The Application of Dynamic System Optimization and Adaptive Algorithm in Hot Rolling

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Abstract

Based on dynamic programming, stochastic optimal control theories and adaptive algorithm, some research work on the computer control system for a hot strip finishing mills is described in this paper, which mainly includes the optimum rolling schedules of strip rolling mills and the optimal calculation of allocating thickness in three rolling mills on one process line, the adaptive method of rolling schedules, and the improved formulating of automatic gauge control (AGC). The thickness control quality of the hot strip mills has been improved remarkably. The application shows that the thickness variation in length of strip is less than 0.08mm and the precision hitting the thickness target is in $\pm 0.1\text{mm}$.

Key words [Rolling mills thickness control](#) [dynamic system](#) [optimization](#)

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