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Computerized Design of Rollers with Straightening Bars

具有矯直棒輓輪之電腦化設計

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Abstract

A systematic application of the two-parameter envelope theory is presented in this work. It offers a simple and general procedure to determine the geometric model of roller contour with the purpose of straightening bars. The geometric model of roller contour is defined as the envelope of a two-parameter family of ball surfaces. Using this concept, the geometric model of roller contour is obtained and the contact lines are analyzed on the roller surface and the ball surface. Computer simulation uses to assemble the roller contours and the straightened bars. The straightened bars become straightening along the instantaneous contact lines of roller contour.

中文摘要

本論文之工作提出雙參數包絡理論的一個系統化應用，提供一種簡單且普遍的矯直機輓輪輪廓幾何模型之決定，輓輪的幾何模型定義為球面的二次曲面族之包絡。使用這方法所求得的輓輪曲面可進一步的分析輓輪曲面上的接觸線，最後並使用電腦模擬來組合輓輪與矯直管棒，可得矯直輓輪確實沿著直線來矯直管棒。

關鍵字：矯直棒；輓輪