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Automatic Thickness Measuring System for Brake Shoe of Traveling Rolling Stock Using Image Processing

,.(Ë(Hitoshi Sato)   0Y -   ,7• (Hisao Nishii)   2Š'g   ,q*½(Shigetoshi Adachi)

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Synopsis :

An automatic system for measuring the thickness of brake shoes on moving rolling stock was developed using a unique image processing technique. Initially, more than 80 brake shoes on a series of moving cars were p hotographed stroboscopically as reference (memory) images. The positions the shoes were then extracted and the remaining thickness of the shoes was automatically measured across a 60 -mm width with a resolution of 1 mm and a accuracy of ±3mm. This information was incorporated in the system data base. The system makes it possible to estimate the interval between shoe changes and contributes to more efficient inspection and spare parts control. A unique algorithm was developed for the system, permitting the extraction of shoe images regardless of their position within the picture and reconstruction of the outline of the shoe which may be obscured by dirt. A multi- purpose image processor, Dr.Image, which was also developed by Kawasaki Steel, plays an important p   art in this labor saving automatic system.

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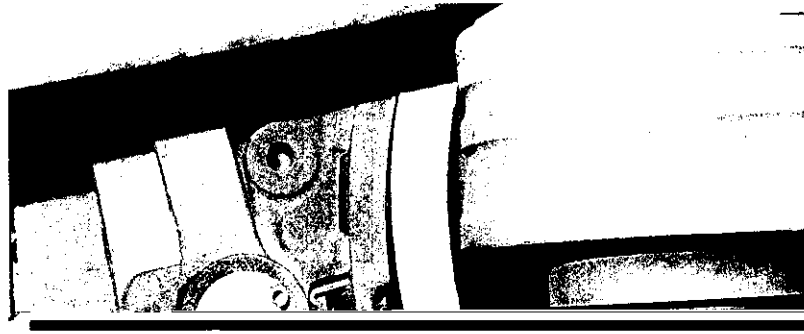# 画像処理による走行鉄道車両の制輪子自動計測システム*

Automatic Thickness Measuring System for Brake Shoe of Traveling Rolling Stock Using Image Processing

要旨

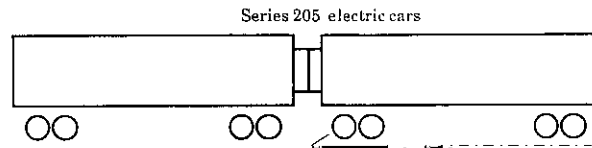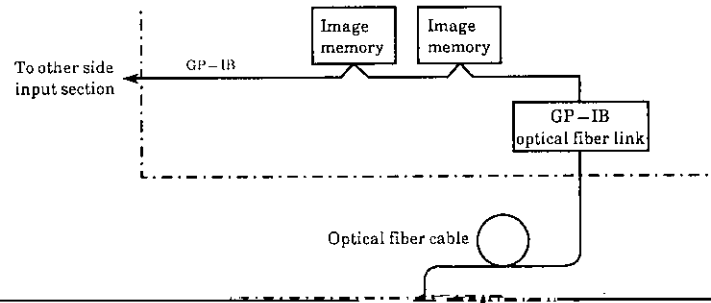筆者らは，走行している鉄道車両の制輪子（ブレーキシュー）の摩耗量を画像処理により自動計測するシステムを開発した。20

Series 205 electric cars

Image input

To other side
input section

GP−IB

Image
memory

Image
memory

GP−IB
optical fiber link

Optical fiber cable

【JR東日本】　制輪子摩耗検知システム

《画像変換》　　　　　　《システム》　　　　　　　《メッセージ》

起動中...　　　　　　　　　　　　　　　　　システム§

[起動]　[停止]　　　　　　[停止]　　　　　　操　作§