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Bainitic Steels for Rails

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Tribological changes in rails are investigated with a focus on the initiation and early growth of Head-Checks by accurate observation of damaged rails using scanning electron microscopy (SEM) and X-ray diffraction (XRD) techniques.

A classification of the so called "white layers" is proposed. Similarities in morphology and mechanical properties of adiabatic shear bands and "white layers" on rail surfaces are highlighted. Appropriate testing methods are applied, enabling the comparison of the properties of the currently used pearlitic steels with the properties of different types of bainitic steels in order to evaluate their potential to improve the resistance against rolling contact fatigue.

The PhD is written in English and SHPB tests also included

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