

## عنوان مقاله:

Analysis of Effective Factors on Rail Failure and Exerted Stress on Rail and Wheel

## محل انتشار:

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## نویسندگان:

Vahid Monfared

Saeed Adibnazari

Habib Esfandiari

## خلاصه مقاله:

Rails fracture by the growth of fatigue crack or critical crack is one of the prevalent defects in railway. The rail fracture, failure and stress analysis should be studied in order to prevention of rail fracture. In this paper, new formulation of contact stress for two rolling bodies is presented, where the results are closed to the hertz stress formulation. Moreover, stress analysis is done by FEM and compared with hertz stress and new stress formulation results. Then, the stress analysis, fracture, prediction of fracture and path of crack motion in rail and wheel is studied, statically which plays important role in this field. Next, the methods of analysis of stress theory fracture with numerical and FEM is compared and it is consequently proved that these approaches have acceptable results compared to other results. Therefore it is possible to rely on these methods and their results. Next, relation between maximum displacement and maximum stress is presented, and path of crack growth and fracture is predicted. For the purpose of analysis, exerted pressure on the rail and wheel assembly is considered on the quadrant of elliptical contact surface, rather than the whole assembly. With this assumption, acceptable results will be obtained. Moreover, in order to prevent crack growth and penetration the plastic method and building of negative discharge energy hole with closed loop path is presented .to restrict crack motion. Finally correction coefficient is introduced for the results

## کلمات کلیدی:

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