

Review

Stray Current Distributing Model in the Subway System: A review and outlook

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Subway system has been widely applied to the urban rail transit system. However, many negative impacts such as the electrochemical corrosion on the subway track and third-party buried metallic infrastructure caused by the stray current, has gradually appeared. This kind of electrochemical corrosion will cause a great threat on buried metallic structure and personal safety. Numerous scholars studied this from various aspects, in which the stray current model is extensively used as an effective means of analysis. In this paper, the existing stray current distributing model is firstly reviewed and analyzed. Secondly, rail potential problem analyzed by means of the stray current distributing model is reviewed. Thirdly, stray current simulation methods are also presented and discussed based on the stray current distributing model. At last, the developing direction and trend of stray current distributing model in the future study is point out based on the content reviewed above.

Keywords: Stray current; Electrochemical corrosion; Numerical calculation model; Simulation model; Subway system

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