

中国电机工程学会电磁干扰(EMI)专委会年会优秀论文 在输电线路短路磁影响下钢轨入地电流产生的地电位计算方法

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摘要:

以往计算跨步电压时没有考虑钢轨入地电流在钢轨附近产生的地电位升高, 使跨步电压计算结果偏大10%。文章经过理论推导, 给出了钢轨附近地电位升高的近似计算模型, 从而得到钢轨与其附近任意点的电位差, 以及从轨顶到0.8 m处跨步电压的简化计算方法。

关键词: 泄漏电流 地电位 跨步电压

A Method to Calculate Ground Potential Raise Caused by Rail Stray Current Induced by Alternative Magnetic Field due to Single-Phase Earth Fault in Transmission Line

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Abstract:

In previous calculation of step voltage the ground potential raise near the rail due to rail stray current is not taken into account, so the calculation result of step voltage exceeds its true value by 20%. After theoretical derivation, an approximate computation model for ground potential raise near the rail is given, thus the potential difference between the rail and any point close to it can be obtained, besides, a simplified method to calculate the step voltage between the rail top and the point, which is apart from the rail top by 0.8m, is given.

Keywords: rail stray current ground potential step voltage

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