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基于S变换奇异值能量熵的单相自适应重合闸故障符号识别法

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摘要： 将S变换、奇异值分解及信息熵理论相结合，用于带并联电抗器的超高压长输电线路瞬时性与永久性故障的识别中。首先直接对故障相电压作S变换求模时频矩阵，然后对该矩阵进行奇异值分解，量化其特征差异，再利用信息熵理论对奇异值求其能量熵，从统计的角度给出系统的奇异值能量熵，最后用简单的符号识别法进行故障的分类。仿真结果表明，其该方法准确率高、稳定性好。

关键词：

A Method to Recognize Fault Symbol for Adaptive Single-Phase Reclosure Based on Energy Entropy of Singular Value from S-Transform

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Abstract: The S-transform, singular value decomposition and information entropy are integrated to distinguish permanent faults occurred in long-distance EHV transmission line equipped with shunt reactor from instantaneous faults in the transmission line. Firstly, S-transform is directly applied to the voltage of faulty phase to obtain module time-frequency matrix; then singular value decomposition is applied to the obtained matrix to digitize the characteristic difference; and then the energy entropy of the singular value is solved by information entropy theory and in the viewpoint of statistics the energy entropy of singular value of power grid is given; finally, the faults are classified by simple symbol recognition. Simulation results show that the proposed method is accurate and stable.

Keywords:

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