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Staff Researches

Wavelet Based Analysis for Transmission Line Fault Location

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Abstract:

This paper presents wavelet based analysis for transmission line fault location. Faults in power transmission lines cause transients that travel at a speed close to the speed of light and propagate along the line as traveling waves (TWs). Traveling wave theory is utilized in capturing the travel time of the transients along the monitored lines between the fault point and the protective relay. This will help in proposing an accurate fault location technique based on high frequency components of fault current. Time resolution for these components is provided by the wavelet transform. This approach has the advantages of being independent of the fault impedance and fault inception angle. The application of the proposed technique for typical faults is illustrated using transient simulations obtained by MATLAB Simulink program.

Keywords:

travelling waves, wavelet transform, fault location, MATLAB Simulink.

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