RE-SYNCHRONIZATION OF MEASUREMENT SIGNALS FROM TWO ENDS FOR FAULT LOCATION ON TRANSMISSION LINES

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Abstract:

This paper presents an approach to synchronize fault records from two-ends of a power transmission line, which is used for fault location identification. The proposed method allows synchronizing both voltage and current signals of fault records from both line ends without using the parameters of line length and line parameters. The proposal utilizes two-step synchronization algorithm: phase angle synchronization and timing or sample synchronization. The algorithm is simple and uses only positive symmetric components of measurement signals; therefore, it can be applied to synchronize measurement signals and identify fault locations for all fault types. The accuracy and effectiveness of the proposed algorithm is validated through simulation using MATLAB software.

Key words: Fault location; Unsynchronized measurement; Phase angle synchronization; Timing synchronization; Transmission lines; Line parameters estimation.