Total least squares and discrete-time line models in HV distance protection

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Abstract-

This paper discusses the applicability of the parameter estimation procedure known as Total Least Squares, to the distance protection of high voltage transmission lines. The TLS based algorithm presented in the paper uses a two parameter discrete-time model for the line to be protected. The procedure is able to provide precise results (within specifications) in shorter time than other well known procedures, showing an improved dependability/security compromise. Two algorithms designed for different power line conditions, provide the procedure with adaptive behavior Trip orders are provided in minimum time, according to the noise level in the current and voltage signals.

Index Terms-

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