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SYSTEM ENGINEERING

一种用于显著误差检测与数据校正的NT-MT联合算法

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摘要 An NT-MT combined method based on nodal test (NT) and measurement test (MT) is developed for gross error detection and data reconciliation for industrial application. The NT-MT combined method makes use of both NT and MT tests and this combination helps to overcome the defects in the respective methods. It also avoids any artificial manipulation and eliminates the huge combinatorial problem that is created in the combined method based on the nodal test in the case of more than one gross error for a large process system. Serial compensation strategy is also used to avoid the decrease of the coefficient matrix rank during the computation of the proposed method. Simulation results show that the proposed method is very effective and possesses good performance.

关键词 data reconciliation, gross error detection, measurement test, nodal test.

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An NT-MT Combined Method for Gross Error Detection and Data Reconciliation

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Abstract An NT-MT combined method based on nodal test (NT) and measurement test (MT) is developed for gross error detection and data reconciliation for industrial application. The NT-MT combined method makes use of both NT and MT tests and this combination helps to overcome the defects in the respective methods. It also avoids any artificial manipulation and eliminates the huge combinatorial problem that is created in the combined method based on the nodal test in the case of more than one gross error for a large process system. Serial compensation strategy is also used to avoid the decrease of the coefficient matrix rank during the computation of the proposed method. Simulation results show that the proposed method is very effective and possesses good performance.

Key words data reconciliation, gross error detection, measurement test, nodal test.

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