

无线电网中数据伪造攻击检测方法研究

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摘要: 针对传统的检测方法一直存在检测误差率大, 能耗多的问题, 提出基于主成分分析方法与平均评分偏离度计算法结合的无线电网中数据伪造攻击检测方法. 采用函数极值法, 确定隶属度, 获取无线电网数据伪造攻击特征. 采用统计学分析法, 确定无线电网数据伪造攻击分类函数, 建立无线电网中数据伪造攻击模型, 采用主成分分析方法对初始无线电网数据伪造攻击的协方差矩阵进行特征值分解, 引入平均评分偏离度计算法, 确定无线电网数据伪造攻击偏离度, 实现无线电网中数据伪造攻击的检测. 实验结果表明, 采用改进检测方法时, 其检测能耗及误检率方面在一定程度上, 相比传统的检测方法要好, 具有一定的优势.

关键词: 无线电网; 数据; 伪造攻击; 检测

Data Forgery Attack Detection Method in Wireless Network

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Abstract: Based on the traditional detection methods have high detection error rate, energy consumption problems, puts forward the data radio network principal component analysis method and the average score combined with deviation calculation method of forgery attack detection method based on. Using function extreme value method to determine the degree of membership, to obtain the characteristics of radio network data forgery attack. Using the discrete wavelet transform method to pre process the data in the radio network. Using statistical analysis method, the determination of the radio network data forgery attack classification function, data forgery attack models for radio network, using principal component analysis method to the covariance matrix of the forgery attack on the initial radio network data eigenvalue decomposition, the average score calculation method is introduced to determine the deviation from the radio network data forgery attack deviation, realize the detection data forgery the radio network attack. Experimental results show that the improved detection method, the detection of energy consumption and false detection rate to a certain extent, compared with the traditional detection method is better, has a certain advantage.

Key words: radio network; data; forgery attack; detection

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