短文

非整数阶系统的频域辨识法

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摘要
提出了一类非整数阶系统的频域辨识最小二乘方法, 给出了算法的详细推导过程. 通过对已知系统仿真, 结果表明该方法有如下优点: 对于非整数阶对象, 能够用更简单的模型获得更好的频域响应拟合; 对于整数阶对象, 采用阶数扫描的方法仍然能找到拟合其频域响应的最好的整数阶模型; 与整数阶系统辨识算法相比, 该算法更稳定.
关键词　非整数阶系统　非整数阶系统辨识　最小二乘方法
分类号　O231

扩展功能

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Identification of Non-integer Order Systems in Frequency Domain

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Abstract
A least squares method for identification of non-integer order systems is introduced into frequency domain and an algorithm is presented. The verification was performed on systems with known parameters. Results show that non-integer order systems have important advantages over integer order systems: We can achieve better fittings of the frequency response data with simpler models for non-integer order systems; We can achieve the best integer-order model that fit the measured frequency response data by scanning orders for integer-orders systems; The algorithm is numerically more stable than in the case of integer order.
Key words　Non-integer systems　non-integer order systems identification　least squares method

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