

Comparative study between ARX and ARMAX system identification

ABSTRACT

System Identification is used to build mathematical models of a dynamic system based on measured data. To design the best controllers for linear or nonlinear systems, mathematical modeling is the main challenge. To solve this challenge conventional and intelligent identification are recommended. System identification is divided into different algorithms. In this research, two important types algorithm are compared to identifying the highly nonlinear systems, namely: Auto-Regressive with eXternal model input(ARX) and Auto Regressive moving Average with eXternal model input (Armax) Theory. These two methods are applied to the highly nonlinear industrial motor.