

Abstract

This paper addresses the problem of designing a multivariable data-driven fuzzy controller for a complex drum-type boiler-turbine system. The proposed design methodology aims to construct a Takagi-Sugeno-type fuzzy controller based on learning data extracted from high-order control configurations. More precisely, fuzzy emulator of a multivariable loop-shaping H-infinity robust controller is developed using subtractive clustering technique. To check the effectiveness of the designed fuzzy controller, simulations are performed under different situations with taking into account the stringent control objectives imposed on boiler system operation