CONTROLLED-VARIABLE SELECTION BASED ON CHAOS THEORY FOR THE TENNESSEE EASTMAN PLANT

Sergio Federico Yapur

Facultad Ingeniería Química - UNL, Argentina

syapur@yahoo.com

This work explores a link between chaotic signals and the selection of controlled variables for plantwide control system design. Some results are shown for the Tennessee Eastman plant, which is well-known for being a challenging process in the field of plant-wide control. This article provides a systematic, data-driven method to select which variables should be controlled. However, since plantwide control problems are inherently complex, this work does not intend to provide a definite solution, but a complementary analysis to take into account towards the final control system design. The discussion highlights the potential hidden in the chaos theory to reduce the complexity of the resulting control system.