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Title: A new Robust Observer-Based Adaptive Type-2 Fuzzy Control for a class of Nonlinear Systems

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Highlights

- 1) To cope with the problem of the curse of dimensionality, new type-2 3-dimensional membership function is presented.
- 2) To decrease the computational cost in the type-reduction part, improved and simplified type-2 fuzzy neural network is presented.
- 3) It's assumed that the all states of the system are unmeasurable, and a robust observer is designed.
- 4) The effect of external disturbance and approximation errors and state estimation errors are eliminated using the new proposed adaptive compensator.
- 5) The stability and zero convergence of the tracking errors is investigated using Lyapunov and Barbalat's theorems.

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