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TaSe TSK MODEL BASED INVERSE MODEL CONTROLLER AND ITS APPLICATION

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ABSTRACT—This paper presents a new approach of achieving inverse model control (IMC) of nonlinear plants with TaSe Takagi-Sugeno-Kang (TSK) fuzzy system. The inverse control law, designed for the control of nonlinear plant dynamics, is derived directly based on approximate model method and it is implemented using TaSe TSK fuzzy system modeling. The robust stability of the IMC is analyzed using Lyapunov function. The proposed IMC strategy is applied to the control of electronic throttle, and simulations demonstrate the effectiveness of this controller.