

Technical and Non-Technical Applications of Evolving Takagi-Sugeno-Kang Fuzzy Models

Radu-Emil Precup, *Senior Member, IEEE*, Stefan Preitl, *Senior Member, IEEE*,
Claudia-Adina Bojan-Dragos, *Member, IEEE*, Mircea-Bogdan Radac, *Member, IEEE*,
Alexandra-Iulia Szedlak-Stinean, *Member, IEEE*, Elena-Lorena Hedrea and
Raul-Cristian Roman, *Student Member, IEEE*

Abstract—This paper presents a part of the results obtained by the Process Control group of the Politehnica University of Timisoara, Romania, in the field of evolving Takagi-Sugeno-Kang fuzzy models. These results concern the development of Takagi-Sugeno-Kang fuzzy models by incremental online algorithms for the description of the dynamics or static behavior of three technical and non-technical system applications, namely magnetic levitation systems, Anti-lock Braking Systems and automated translation.

Index Terms—Anti-lock Braking Systems; automated translation; evolving Takagi-Sugeno-Kang fuzzy models; magnetic levitation systems.

Radu-Emil Precup, Stefan Preitl, Claudia-Adina Bojan-Dragos, Mircea-Bogdan Radac, Alexandra-Iulia Szedlak-Stinean, Elena-Lorena Hedrea and Raul-Cristian Roman are with the Department of Automation and Applied Informatics, Politehnica University of Timisoara, Bd. V. Parvan 2, 300223 Timisoara, Romania (e-mails: radu.precup@upt.ro, stefan.preitl@upt.ro, claudia.dragos@aut.upt.ro, mircea.radac@upt.ro, alexandra-iulia.stinean@aut.upt.ro, elena.constantin@student.upt.ro, raul-cristian.roman@student.upt.ro).