Observability Forms for Switched Systems With Zeno Phenomenon or High Switching Frequency

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Abstract :

This technical note deals with the observability of a class of switched systems with Zeno phenomenon or high switching frequency. Particularly, three observability forms are proposed and the observability for each form with knowledge of filtered switching signal is analyzed. Meanwhile, sufficient and necessary conditions for the existence of a diffeomorphism to transform a class of switched systems into one of such forms are presented. Examples and simulations are given at the end to highlight the theoretical results.