

## The Algebraic Structure of Delay-Differential Systems: A Behavioral Perspective.

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*Abstract:* This paper presents a survey on the recent contributions to linear time-invariant delay-differential systems in the behavioral approach. In this survey both systems with commensurate and with noncommensurate delays will be considered. The emphasis lies on the investigation of the relationship between various systems descriptions. While this can be understood in a completely algebraic setting for systems with commensurate delays, this is not the case for systems with noncommensurate delays. In the study of this class of systems functional analytic methods need to be introduced and general convolutional equations have to be incorporated. Whenever it is possible, the results will be linked to the relevant control theoretic notions.

*Keywords:*

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