

# A CONSTRUCTIVE APPROACH FOR INVESTIGATING THE STABILITY OF INCOMMENSURATE FRACTIONAL DIFFERENTIAL SYSTEMS

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**ABSTRACT.** In this work, we study the asymptotic behaviour of solutions to generalized incommensurate fractional systems. We consider fractional systems with rational orders and introduce a constructive approach for analyzing the stability of incommensurate fractional order systems with rational orders in arbitrary dimensions. It introduces a criterion to determine the asymptotic stability of the system.

This presentation is based on joint work with Kai Diethelm from Technische Hochschule Würzburg-Schweinfurt, Ha Duc Thai, and Hong The Tuan from Academy of Science and Technology Vietnam.