

# Sufficient conditions for Domain stabilizability of uncertain fractional-order systems under static-output feedbacks

## Speaker:

Dr. Salim Ibrir  
Associate Professor, EE Dept. KFUPM

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## Abstract:

Extended linear-matrix-inequalities conditions, ensuring the stability of commensurate fractional-order linear systems by static output feedbacks, are given. It is assumed that the system uncertainties are constant and may be present in all the system matrices. The stabilizing feedback is conceived to overcome the system uncertainty and place the poles of the closed-loop system in a well-defined domain that is formed from the intersection of many LMI regions in the complex plane. The validity of the obtained results is testified through an example of a fractional-order system with polytopic uncertainties.

## Biography:

Dr. Salim Ibrir received his B. Eng. degree from Blida Institute of Aeronautics, Algeria, in 1991, his M.Sc. from INSA de Lyon, France, in 1994 and his Ph.D. degree from Paris-11 University, in 2000. From 1999 to 2000, he was a research associate (ATER) in the department of Physics of Paris-11 University. Dr. Ibrir held more than 3-years post-doctoral position in Concordia University and many short research visiting positions in diverse north American universities before joining The University of Trinidad and Tobago as Associate Professor. From 2011 to 2013 Dr. Ibrir was with the department of Electrical and Computer Engineering of the University of The West Indies, Saint Augustine Campus. In September 2013, Dr. Ibrir joined the electrical engineering department of King Fahd University of Petroleum and Minerals, Saudi Arabia. His current research interests are in the areas of nonlinear control and estimation, model-order reduction, fractional-order systems, adaptive control of non-smooth nonlinear systems, fuel-cell systems, robust system theory and applications, time delay systems, hybrid systems, convex optimization, intelligent and applied controls, signal processing, ill-posed problems in estimation, hybrid systems and Aero-Servo-Elasticity. He is the author of more than 120 technical papers in prestigious control journal and conferences.