

This work is concerned with chaos suppression and synchronization of commensurate fractional systems with order $q:0 < q < 1$, both certain and uncertain, under the Riemann-Liouville definition. It is shown that the use of convex structures to exactly rewrite nonlinear expressions allows controller design to systematically exploit the fractional-order stability domain via linear matrix inequalities, which are efficiently solved via convex optimization techniques. Exploiting the fractional-order domain proves to be advantageous since it is always larger than the integer-order counterpart. The proposed approach is compared with former results on the subject in order to test its improvements as well as its limitations.