George A Anastassiou* (ganastss@memphis.edu), Department of Mathematical Sciences, University of Memphis, Memphis, TN 38152. Univariate Hardy type fractional inequalities. Preliminary report.

Here we present integral inequalities for convex and increasing functions applied to products of functions. As applications we derive a wide range of fractional inequalities of Hardy type. They involve the left and right Riemann-Liouville fractional integrals and their generalizations, in particular the Hadamard fractional integrals. Also inequalities for left and right Riemann-Liouville, Caputo, Canavati and their generalizations fractional derivatives. These application inequalities are of $L_p$ type, $p \geq 1$, and exponential type, as well as their mixture. (Received July 06, 2012)