1067-35-121   **George A. Anastassiou** (`ganastss@memphis.edu`), Department of Mathematical Sciences, Memphis, TN 38152, and **Razvan A. Mezei*** (`rmezei@memphis.edu`), Department of Mathematical Sciences, Memphis, TN 38152. *Quantitative Approximation by Fractional Smooth Poisson Cauchy Singular Operators.* Preliminary report.

In this article we study the very general fractional smooth Poisson Cauchy singular integral operators on the real line, regarding their convergence to the unit operator with fractional rates in the uniform norm. The related established inequalities involve the higher order moduli of smoothness of the associated right and left Caputo fractional derivatives of the engaged function. Furthermore we produce a fractional Voronovskaya type of result giving the fractional asymptotic expansion of the basic error of our approximation. We finish with applications. Our operators are not in general positive. (Received July 25, 2010)