1125-44-2358   **Hua Chen*** (`chenhua@udel.edu`), Ewing 115, Department of Mathematical Sciences, University of Delaware, Newark, DE 19716, and **Udita N. Katugampola** (`udita@udel.edu`), Ewing 311, Department of Mathematical Sciences, University of Delaware, Newark, DE 19716. *ρ-Laplace and ρ-Fourier Transforms of Katugampola fractional operators and their Applications.*

The *Katugampola fractional integrals and derivatives* are generalizations of both the Riemann–Liouville (RL) and the Hadamard fractional differintegrals. In this talk, the Laplace and Fourier transforms of Katugampola fractional operators are derived. It shows that the Laplace and Fourier transforms of the Katugampola fractional differintegrals are also the generalizations of that of RL fractional differintegrals. Then, we present some illustrative examples that use the proposed Laplace and Fourier transform to solve differential equations involving Katugampola fractional operators. Finally, we show some interesting connections between the Laplace and Mellin transforms when applying the idea to derive the transforms of the Hadamard fractional differintegrals. The Sumudu transforms, a variation of Laplace transform, of the operators in question are also derived. (Received September 20, 2016)