

Summary and Personal works

The main objectives of this dissertation are the followings:

1. To introduce generalized form of Hankel Transform i.e. $B_{1,\mu,m}\psi(x)$ and $B_{2,\mu,m}\psi(x)$ and study some of its properties on testing function space and generalized function space (chapter 2).
2. To study the product of three distributions $x_+^\lambda \ln^p x$, $x_+^\mu \ln^q x$, $x_+^\nu \ln^r x$ and also $x_-^\lambda \ln^p x$, $x_-^\mu \ln^q x$ and $x_-^\nu \ln^r x$ with the help of neutrix limit (chapter 3).
3. To discuss the convolution and neutrix convolution of generalized Fresnel integrals associated with Ramp function i.e. $S_{(k,+)}^R(x)$ and $S_{(k,-)}^R(x)$ with x^r and to discuss the convolution of $\sin_+^R(x^k)$ and $\sin_-^R(x^k)$ with the distributions x_+^r and x_-^r respectively (chapter 4).
4. To generalize the definition of Mellin convolution product by using neutrix limit. Further to give results on Mellin convolution product of distribution by using gamma function for negative integers(chapter 5) .