1017-35-8   **Bharat N. Bhosale*** (`bnbhosale@rediffmail.com`), Dr. Bharat N. Bhosale, Principal, S.H.Kelkar college, Devgad, 416613 Devgad, India. *On Fractional Fourier transform of tempered distributions.*

On Fractional Fourier transform of Tempered Distributions In this Paper, we introduced the fractional Fourier transform as an extension of the ordinary Fourier transform and extended it to the Tempered distributions using Adjoint method. The fractional Fourier analysis is used for investigation of fractal structures; which in turn are used to analyze different physical phenomena. For instance, it has got the applications in optical engineering, in quantum mechanics and intensity distribution in optics and signal processing. as has been discussed by Alieva and Barbe [3]. It is proved that the fractional FT and it's inverse, is a continuous isomorphism from S (IRn) onto S (IRn). Obtained the convolution theorem and in the end illustrated the application of fractional FT in solving Convolution equations and Initial value problems. (Received October 08, 2005)