Lec-Sec-B, 11/10/24

H.W. A certain channel has ideal amplitude, but non-ideal phase response, given by

$$|H(f)| = 1$$

$$\theta_n(f) = -2\pi f t_0 - k \sin 2\pi f T \qquad k \ll 1$$

Show that $y(t)$, the channel response to an input pulse $g(t)$, B.L. to B Hz is

$$y(t) = g(t - t_0) + \frac{k}{2}\left[g(t - t_0 - T) - g(t - t_0 + T)\right]$$

use:- $e^{-jk\sin 2\pi f T} \approx 1 - jk \sin 2\pi f T$