Let us start with the below equality obtained using phasor formula, that is

|  |  |
| --- | --- |
|  | (1) |

where substituting both and with chirp frequency component yields

where In case of Doppler existence within the channel, the total received signal is

where denotes Doppler’s frequency defined as a function .

1. How to obtain Equation (1)?
2. How to approximate the pulseshape ?

Where . This expression corresponds to the time where has a value of %10. However, we concluded that neither convergent nor finite as seen in Figure 1.

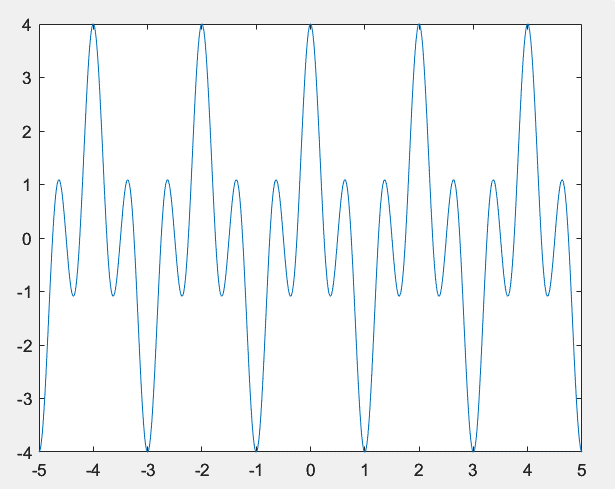


Figure 1. Time plot of g\_T(t)

The parameters used to interpret Figure 1 are as follows:

N = 4; *fm*=1;

1. In case of Doppler shift existence:

Phase of signal:

Instantaneous angular frequency of signal:

Instantaneous frequency of signal:

Doppler frequency shift: