

Q.)

Step 1: is it a PC wave? (what we want)

1) test for coherence

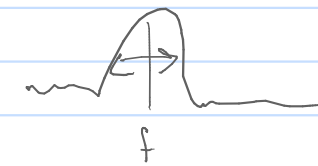
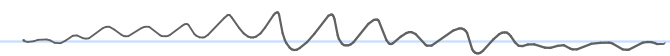
Real-world signal is like a sine wave times \square (window to make it finite)

$$\rightarrow p_{ideal}(f) * w(f)$$

convolve window
Fourier space

time-frequency
as window gets bigger, spread gets smaller

main problem with real-world data is that it's finite, but theory is for infinite



so only get wiggles
window, detrend

option • cross-corr between N, E, Z to determine coherence
↳ could also do other things to measure coherence

visualization of cross-corr on map

1a) model before using data

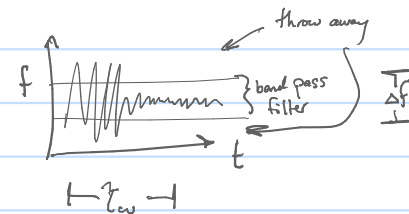
(Nyquist Δt data - 1 minute

T_{window} - choose to match time scale of overall event

γ_{wave} - resolve the wiggles per osc is much smaller than window time

*optimize timescales - job

2) do we want to filter out everything but the PC wave?
- band pass filter (spectrogram)



how to choose Δf ; γ_w - job
could also do cross-corr

3) coherence measures - between stations

maybe normalize out amplitude and just do coherence on phase

- phase coherence (for PC waves)

4) network (thresholding)
like in paper

maybe it would get rid of the thresholding issues

TEST OUT PHASE CORRELATION