My pipeline
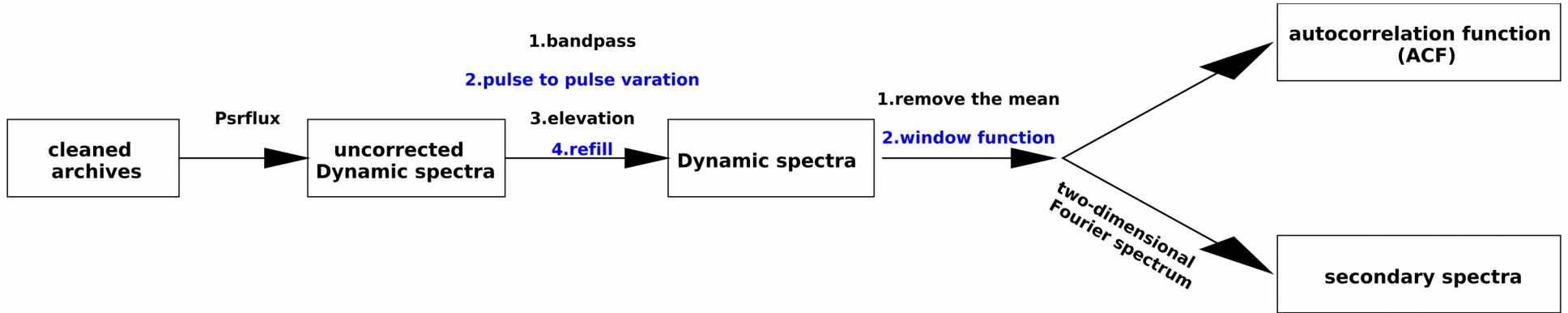
Scintillation Census
or How to select pulsars

- Scintillation Bandwidth

  A. bandwidth vs DM

  B. bandwidth vs frequency $(f\_d \propto freq^{**}(4.4))$

  > My suggestions: For FR606: DM < 30.0 ?; For NenuFAR: DM < 25? or 10?.

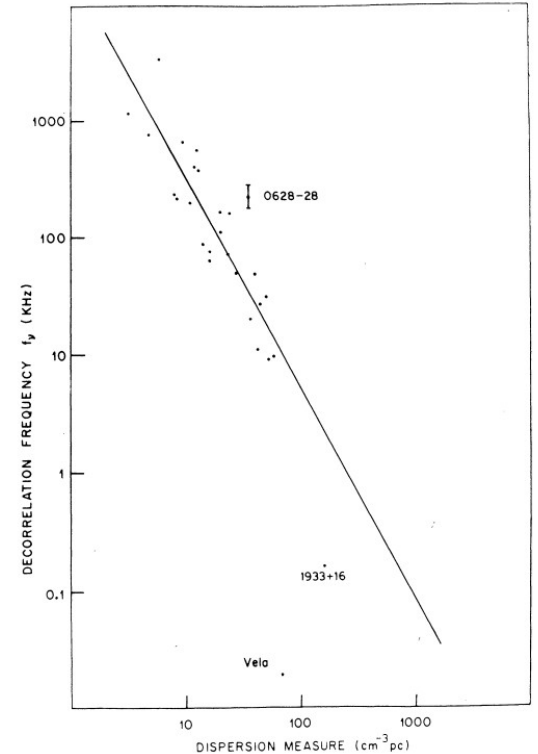- Scintillation time-scale (> 10 s)

- S/N and number of phase bin

  if df = 5kHz, then dt = 1/df = 0.2ms.

  if we need 128 nbin at least,

  the pulsar period > 0.2*128 = 25.6 ms.

  For example: J0636+5128 (P0=2.86895289 ms):

  nbin = P0/0.2ms = 14.344, so our data nbin = 8.

V.Balasubramanian 1985

What we can do with Scintillation Census

- Interstellar holography of arc source; Walker et al.2005,2008

- Proper motion

  > unknown 100 pulsars (DM<30, decj > -30)

- Scintillation as a probe of ISM structures

  >identify and locate specific structures like the edge of the local or interstellar clouds etc.
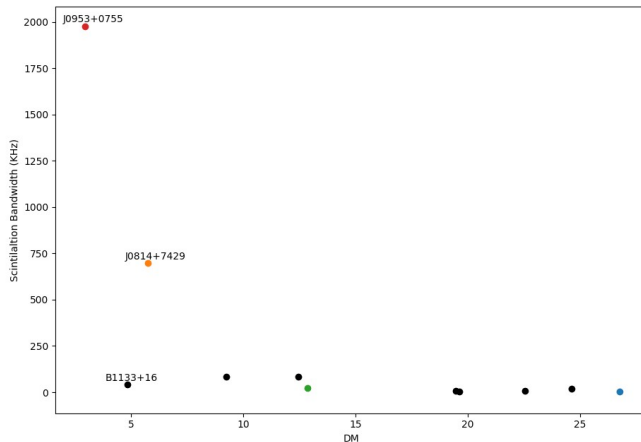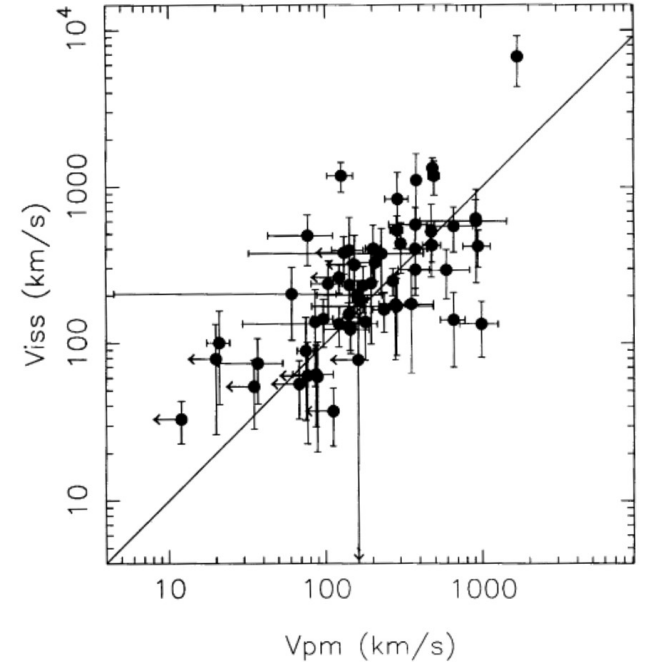
Who already did: Bhat et al.1998
Local Bubble: Lallementet et al. (2003)

What we can do with long term Scintillation Monitoring

- The location of the scattering screen

- Binary system

- Scintillation as a source of timing noise

- to understand ISM scattering theory