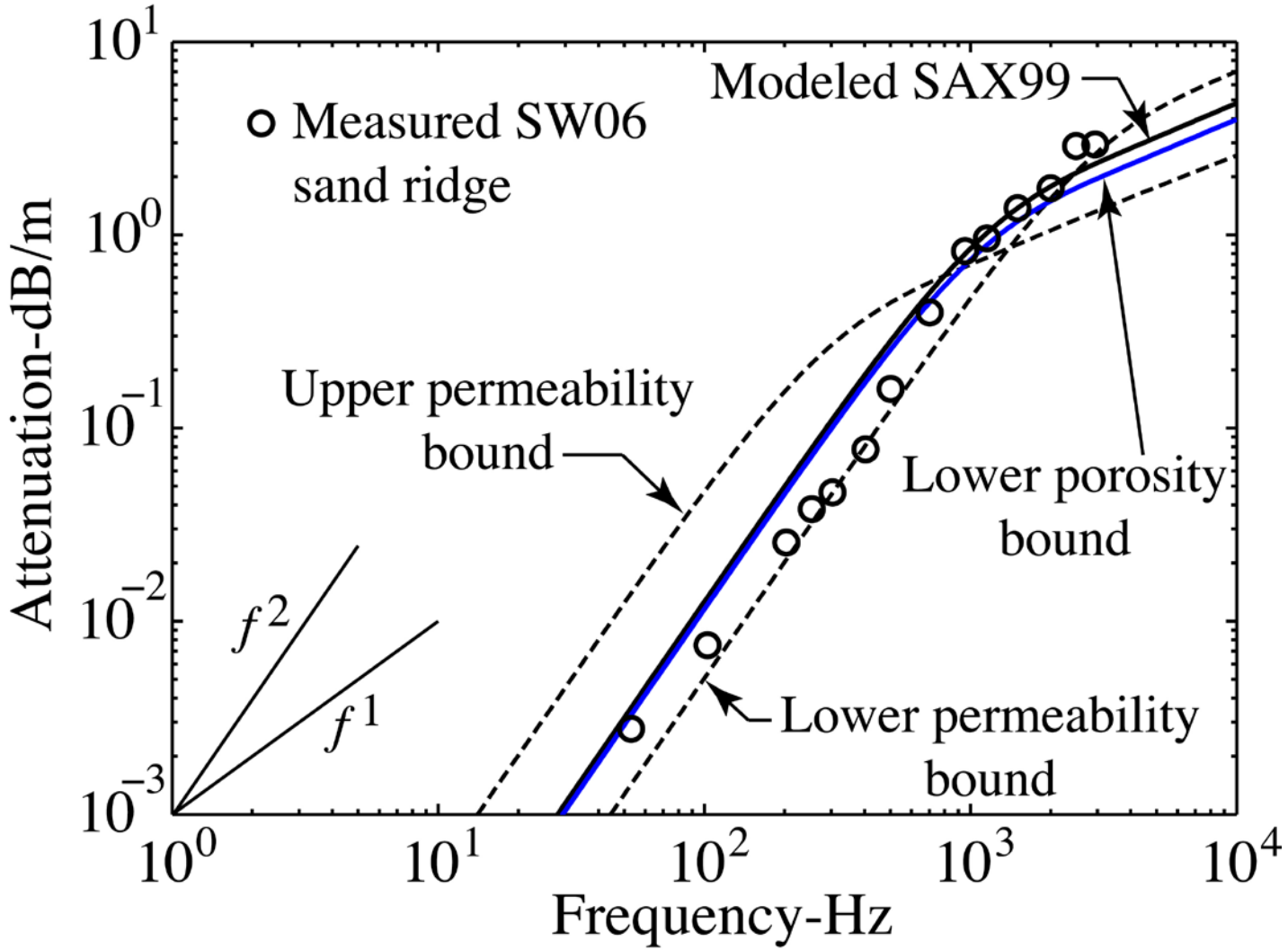
Directions

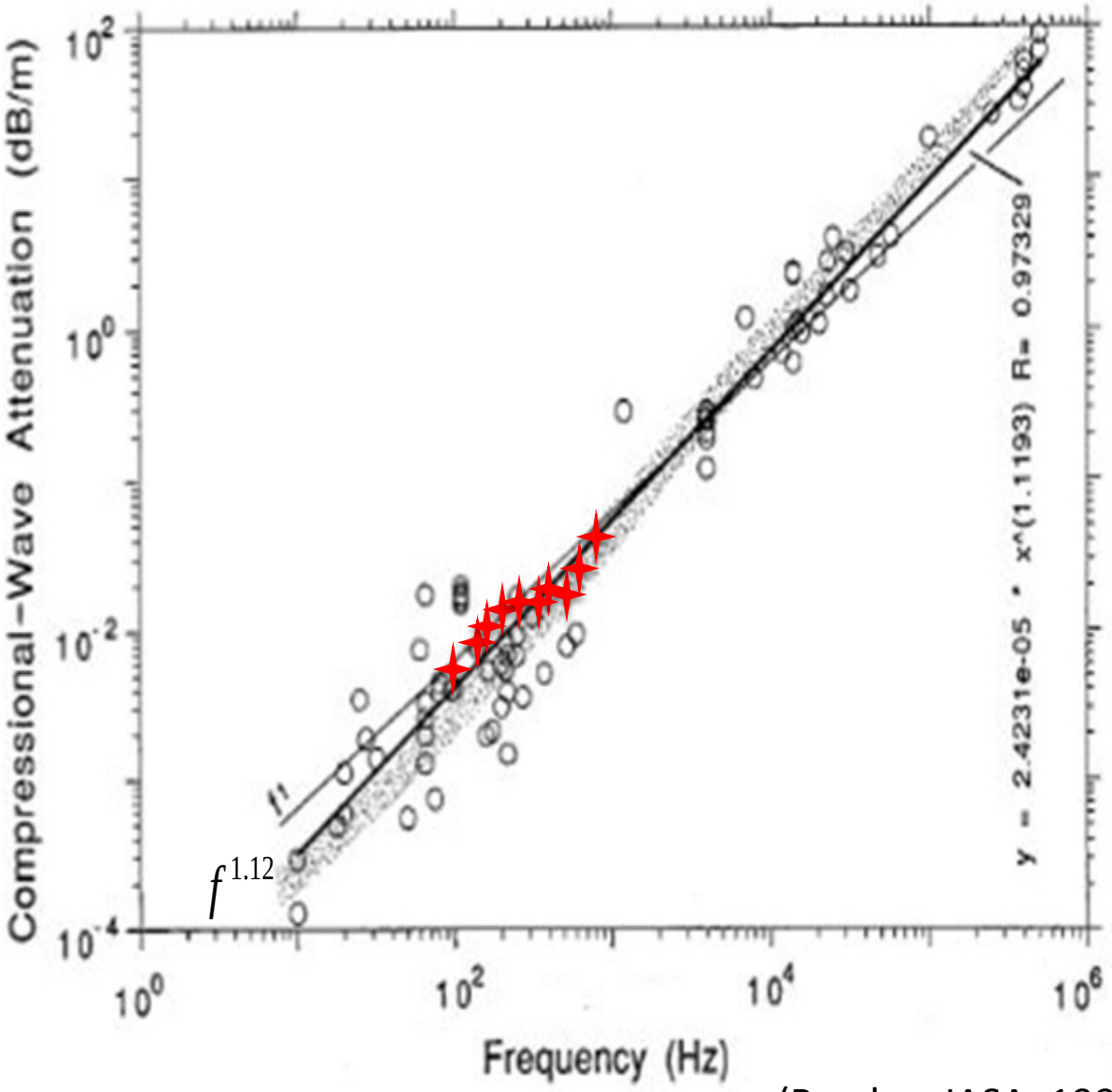
- Dispersion of sound speeds and attenuation in mud sediments in 10-5000 Hz band
- Challenges
  - Seabed of mud patch has strong depth and horizontal variability
  - No consensus of physical model for mud
  - No consensus on models that relate observed variability of seabed to future acoustics measurements
- How do we take the physical properties of the cores and make the transition from geology to geoacoustic models for mud patch area that also captures the variability?

Attenuation dispersion for sand in SW06

Knobles and Wilson from SW06 JASA 2008



Comparison with other data sets



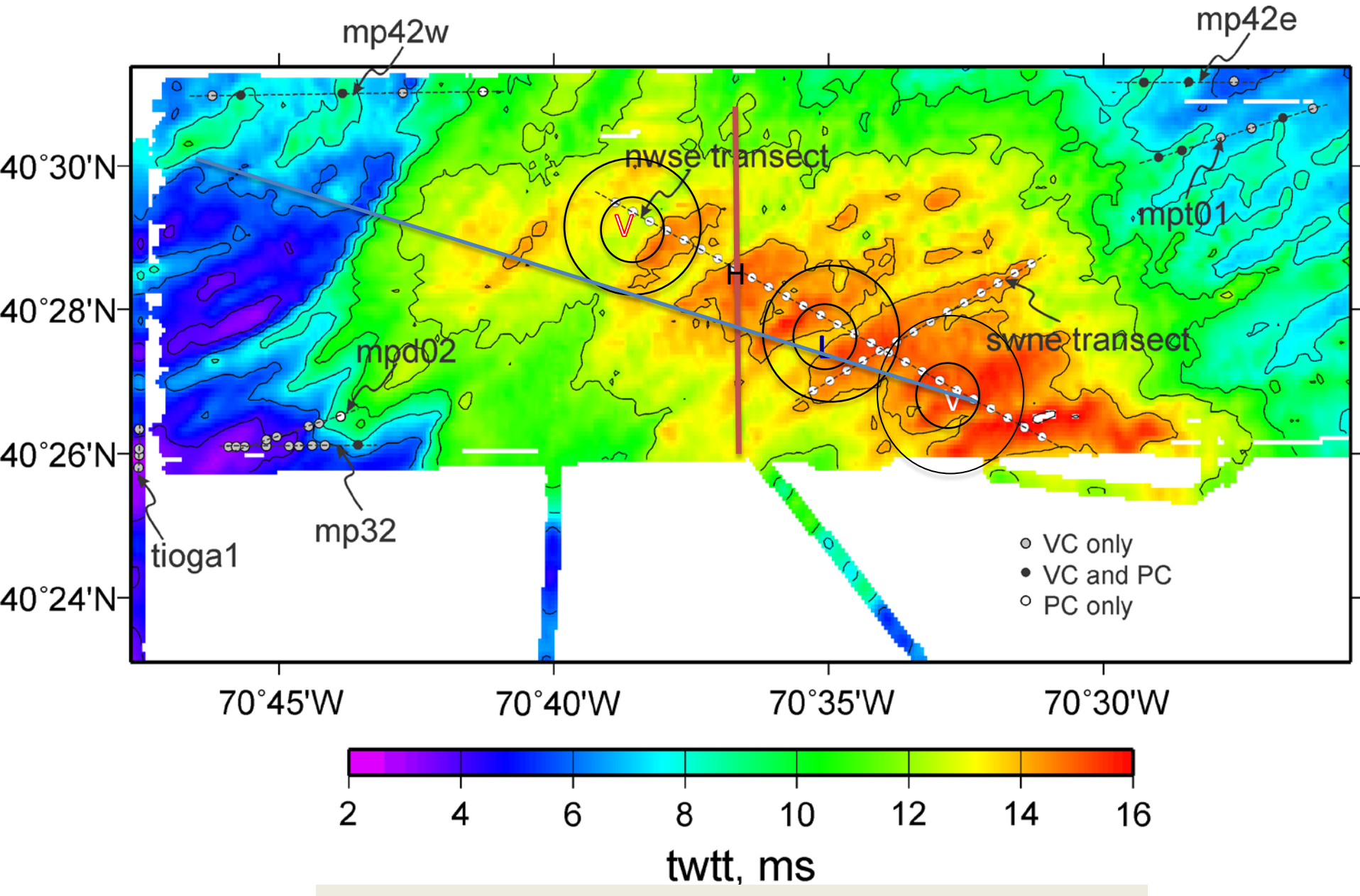
(Bowles, JASA, 1997)

Sound speed and attenuation dispersion in 10-5000 Hz band

- What is the physics of sound speed and attenuation dispersion for mud sediments in the 10-5000 Hz band
  - Bridge the gap of low frequency and high frequency in a single experiment (Zhou et al)

- **Importance of the cores** is that they provide physical measurements for mud patch
  - Density, porosity, ---- grain size distributions versus depth
- Then, using the statistics of these physical parameter values, seabed physics models (ex., those that satisfy causality) can then predict sound speed and attenuation dispersion
- Importance of SAMS is that sound speeds and attenuations are measured over a large band----- not at just 50 kHz

Mud variability, proposed propagation tracks, and cores



Todays Action Items for GGMI group

- Final data format from core logging
  - Availability to group
- What further analysis needs to be done with cores and when
  - Grain size analyses
  - Analysis of depth of top of cores
  - Additional core logging?
- Quantifying variability: how much is “real” and how much is due to experimental variability
- Where are we on providing
  - propagation model inputs for (ex. elastic PE)
  - *a priori* information on seabed inversion and statistical inference schemes.
  - physical parameters for grain shearing , house of cards, and other microscopic models of the seabed