Quantitative Imaging Biomarkers Alliance

RSNA

RSNA QIBA SWS: System Dependencies

Moderator: Palmeri

2013-03-08

Agenda

- Review previous call summary
- Phantom study:
  - Summary of data collection / reporting
  - Identifying differences from a system dependency standpoint
  - Resolving these differences
  - Sharing of raw data for processing by other groups
- IEEE & RSNA abstract update
- Literature database -> manuscript

Previous Call Summary

(previous call summary to be displayed)

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(previous call summary to be displayed)

CIRS Phantom Study

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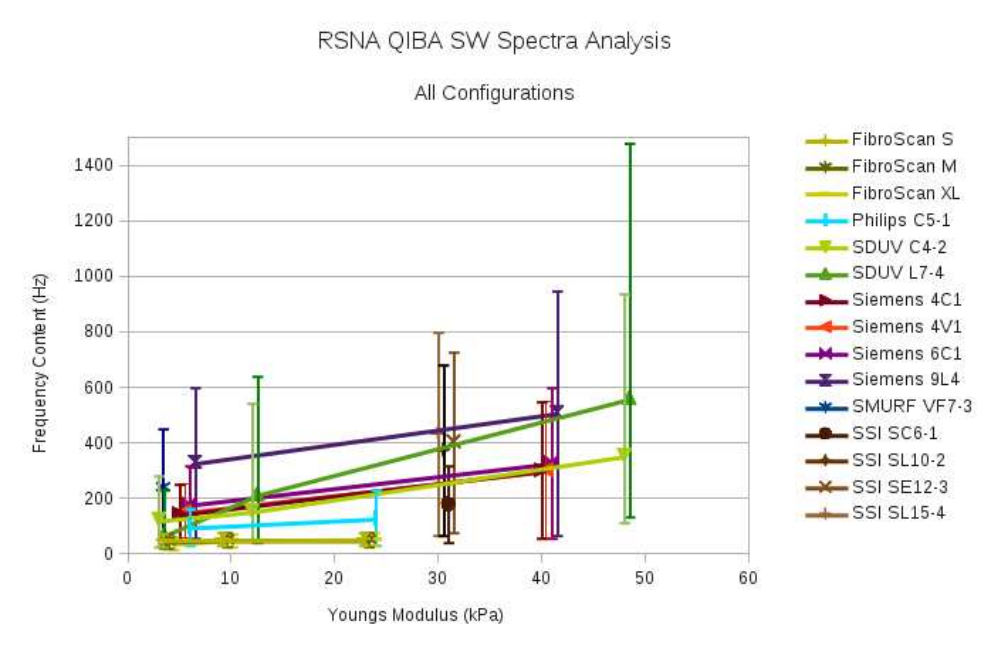
- Summary of site data collection / analysis
- How do we resolve differences?
  - Delineate differences between sites / systems
  - Compare with Duke measurements for a given phantom pair
- Overview of how Duke tested for focal configuration dependencies (Kathy)

Spectral Content

- One specific difference could be shear wave spectral content
- Remember what we have done...

- Now all sites have similar phantoms; repeat spectral measurements?
- Common methodology?

- Duke characterization of spectral differences (Kathy)



Algorithmic Differences?

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- What role does the SWS estimation algorithm play?
- Research sites:
  - Share data from CIRS phantom acquisitions
  - Allow other groups to reconstruct SWS using "in house" methods
  - Duke can host ~300 GB of raw data from all phantoms
- Provide equivalent simulation data for the raw experimental phantom data

IEEE & RSNA Abstracts

- Tim Hall wrote an abstract for presentation at IEEE Ultrasonics Symposium (July 2013)
  - https://docs.google.com/file/d/1u-I1CdikJ8ZTtlHGNqR5NMqX09zDdgkpp9apCFyPFpC45kKpnCnVdmxe6LHc/edit?usp=sharing

- Brian Garra is writing an abstract for RSNA (due 04/10; November 2013)

Literature Database

- Clinical subcommittee will be leading an effort to prepare a review manuscript of the current literature
- Mendeley database "up-to-date"
- Data-mining spreadsheet: https://docs.google.com/spreadsheet/ccc?key=0Am2eCp6q_J7HdERRR1UwMGRJZjM3aWVQMzhJNDZvX2c&usp=sharing
- Our task: determine the useful system dependencies to extract from the data

Thank you!

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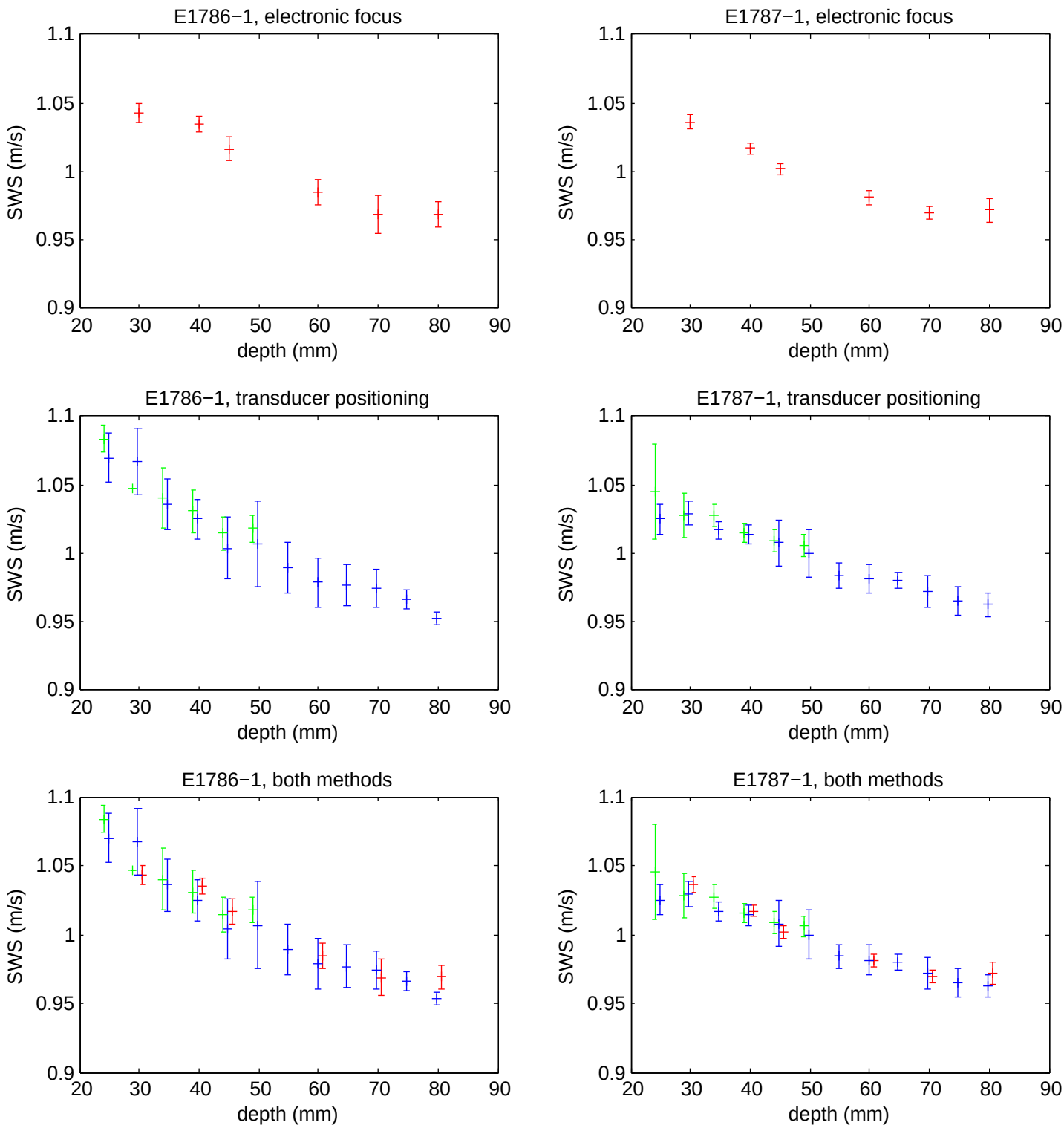
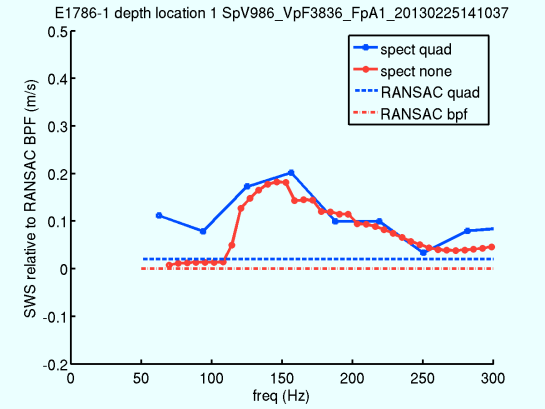
Thank you Julie and RSNA staff!!


E1786−1, electronic focus
E1787−1, electronic focus
E1786−1, transducer positioning
E1787−1, transducer positioning
E1786−1, both methods
E1787−1, both methods
SWS (m/s)
depth (mm)
1.1
1.05
1
0.95
0.9
20
30
40
50
60
70
80
90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spect quad
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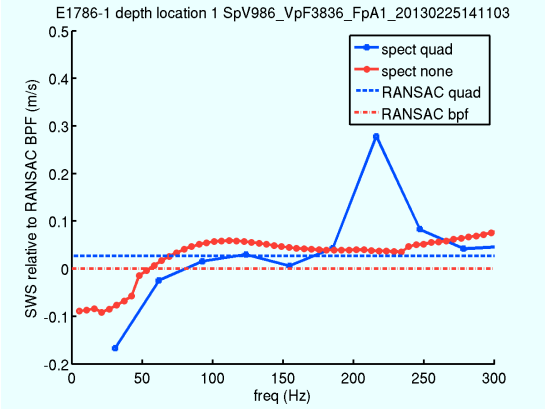
RANSAC quad
RANSAC bpf
SWS relative to RANSAC BPF (m/s)
freq (Hz)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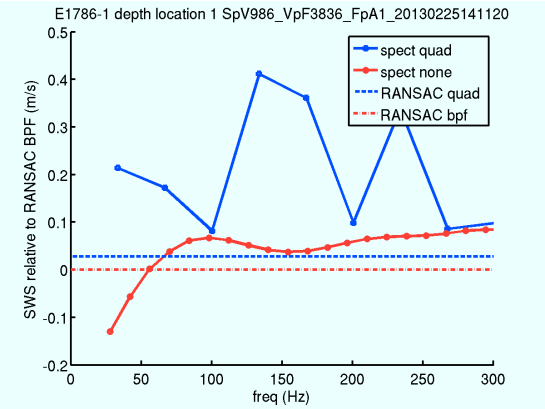
RANSAC bpf
SWS relative to RANSAC BPF (m/s)
freq (Hz)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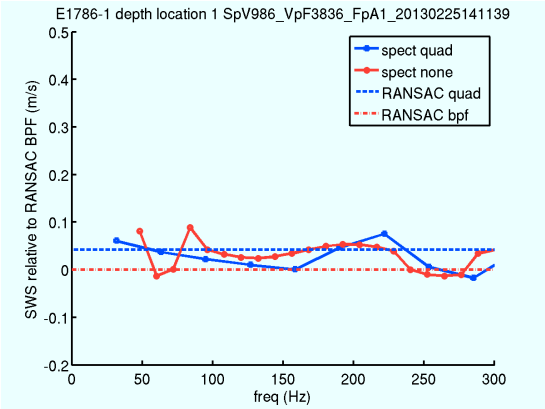
freq (Hz)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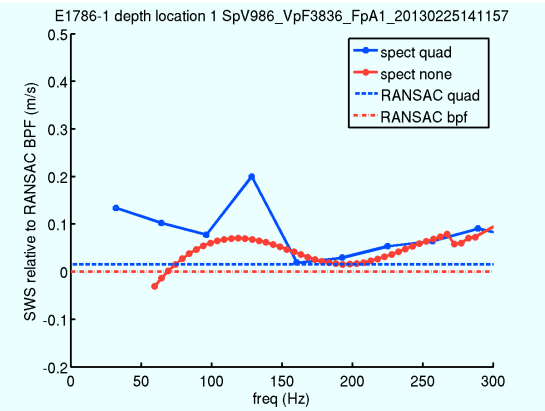
RANSAC bpf
SWS relative to RANSAC BPF (m/s)
freq (Hz)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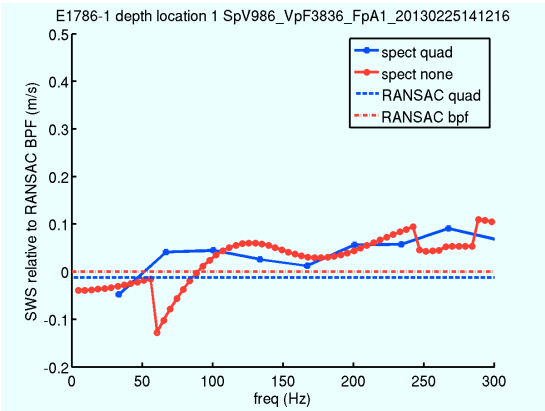
spect none
RANSAC quad
RANSAC bpf
SWS relative to RANSAC BPF (m/s)
freq (Hz)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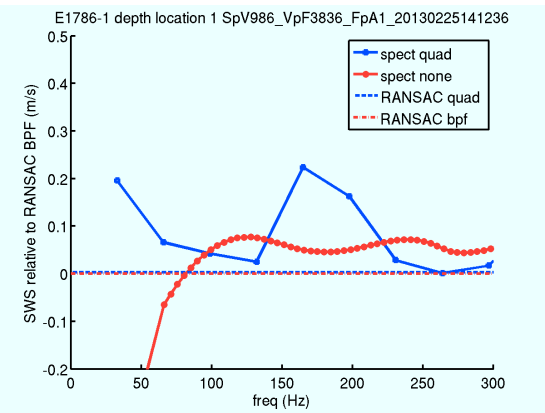
spect none
RANSAC quad
RANSAC bpf
SWS relative to RANSAC BPF (m/s)
freq (Hz)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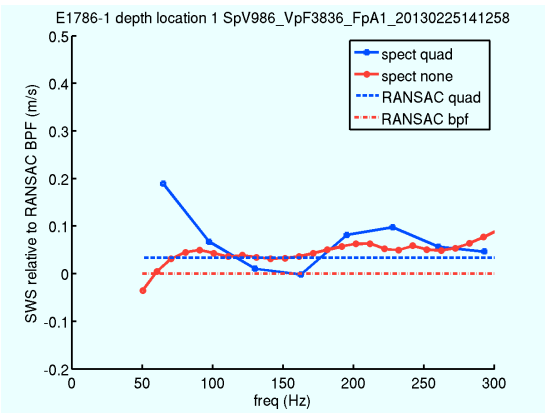
spect none
RANSAC quad
RANSAC bpf
SWS relative to RANSAC BPF (m/s)
freq (Hz)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spect none
RANSAC quad
RANSAC bpf
SWS relative to RANSAC BPF (m/s)
freq (Hz)