Proposal for a Simple SIV Testing Center

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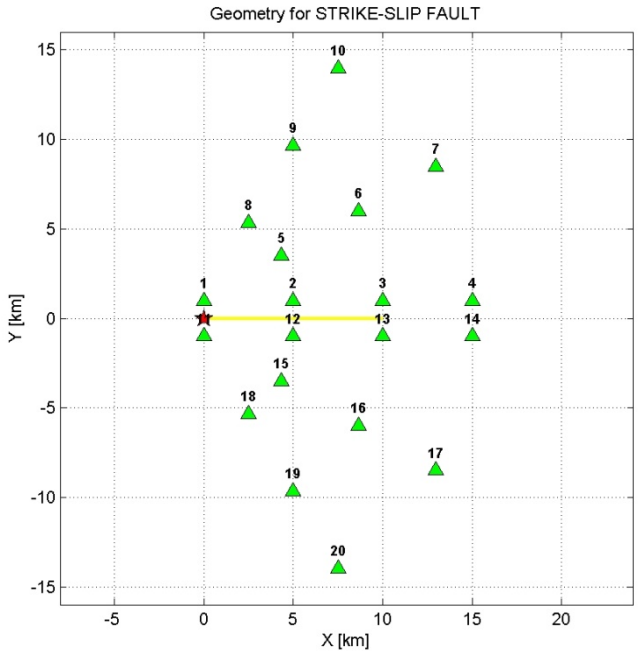
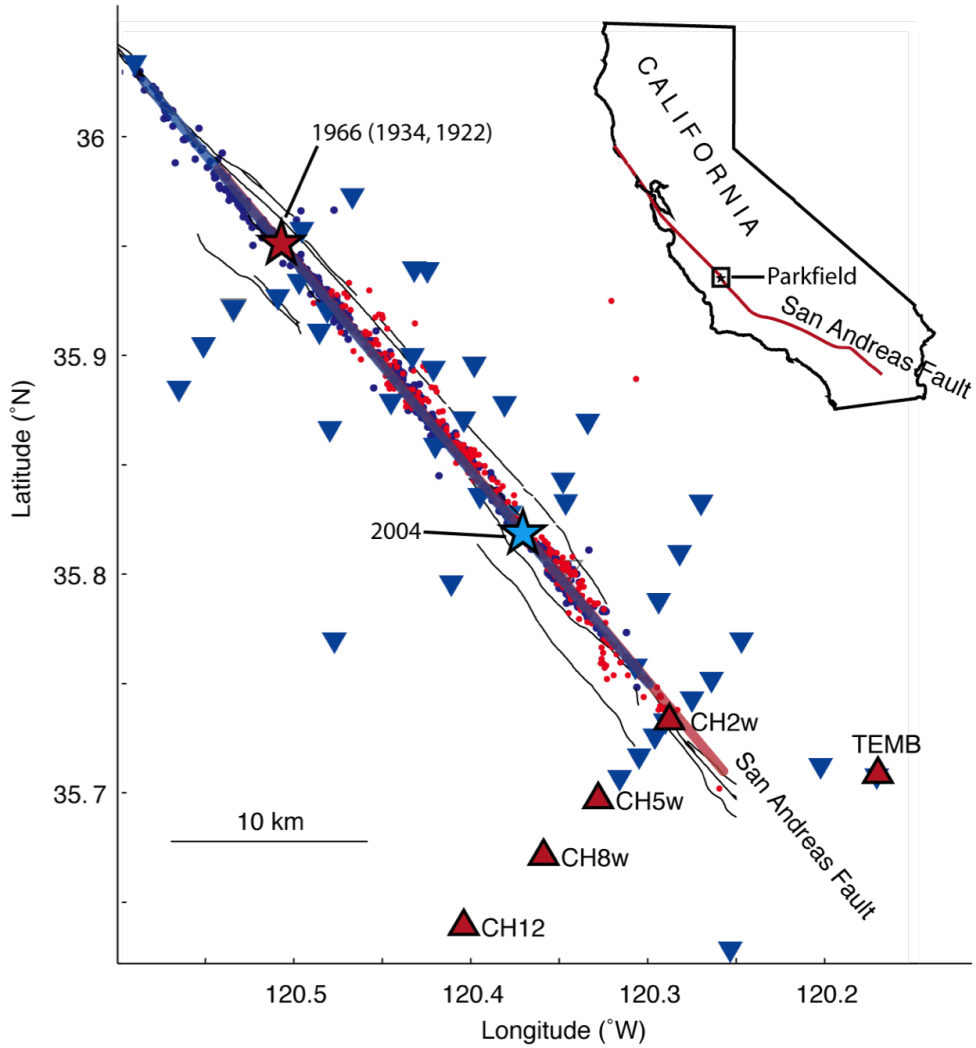
Fault & Station Geometry

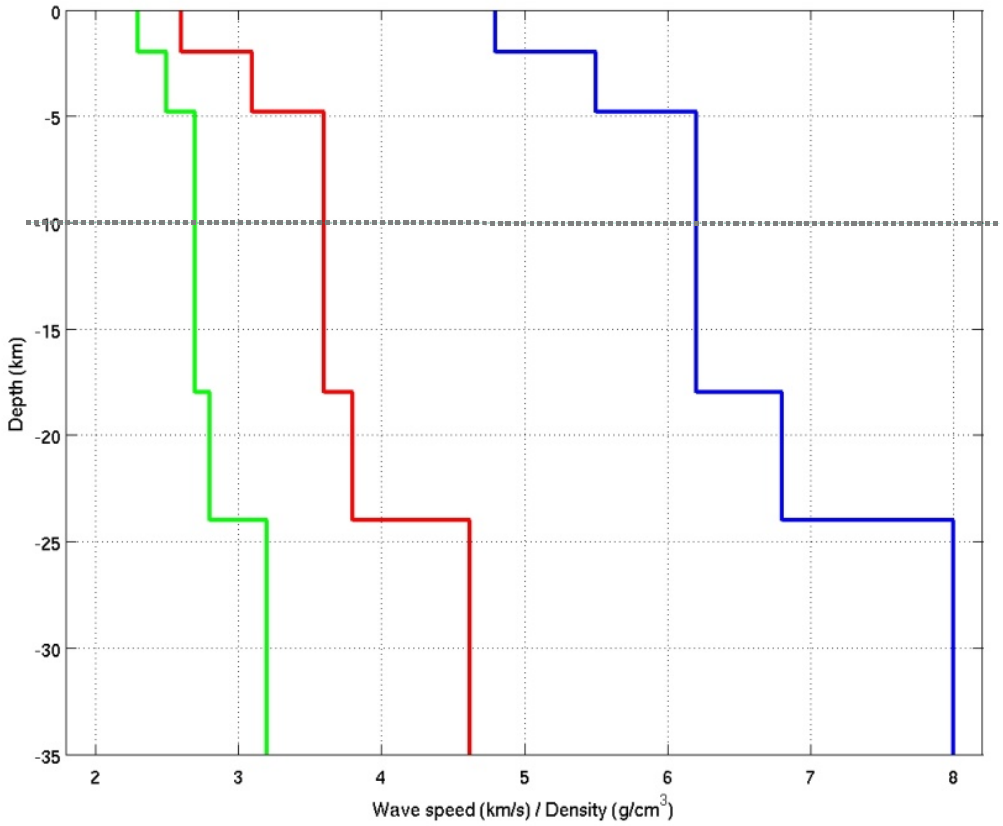
Ideal case



Parkfield case



Velocity model

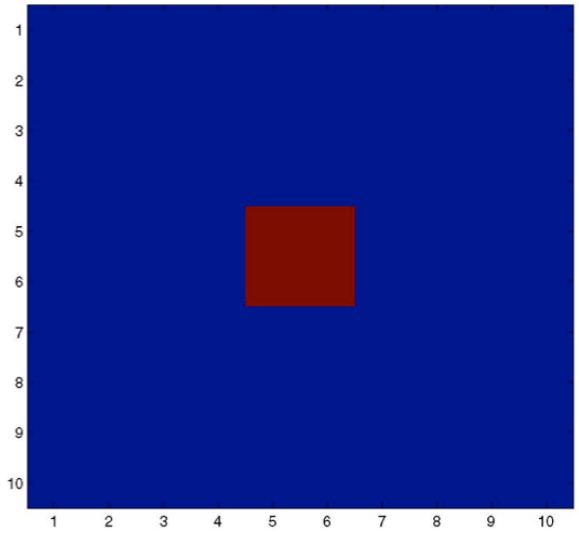


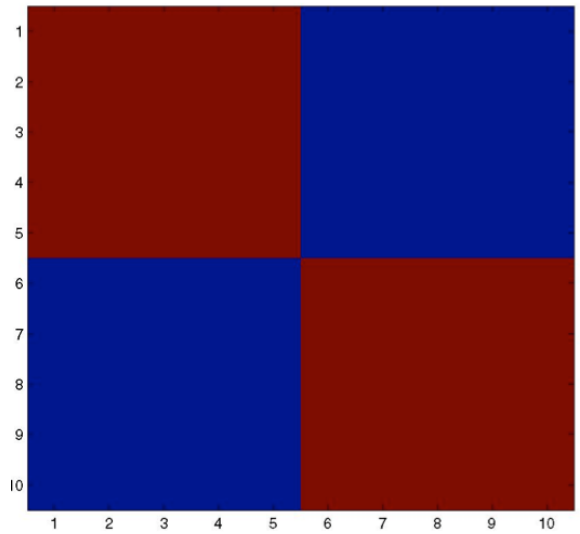
Evaluation Metrics

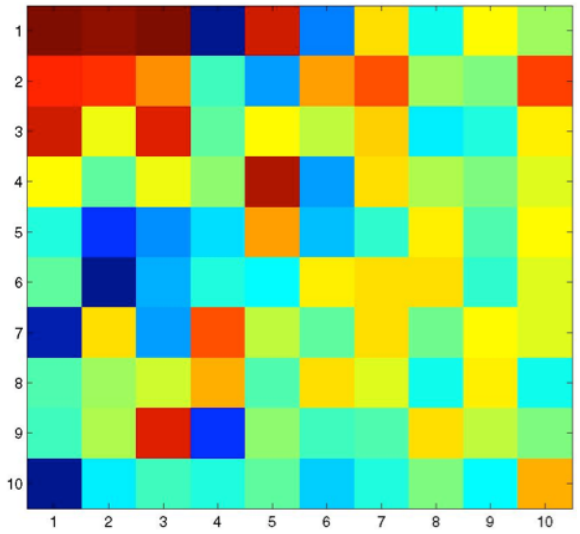
- Source model
  - Cross-correlation (SPICE Test, slip only)
  - Modified cross-correlation (slip at each time step)
  - ...

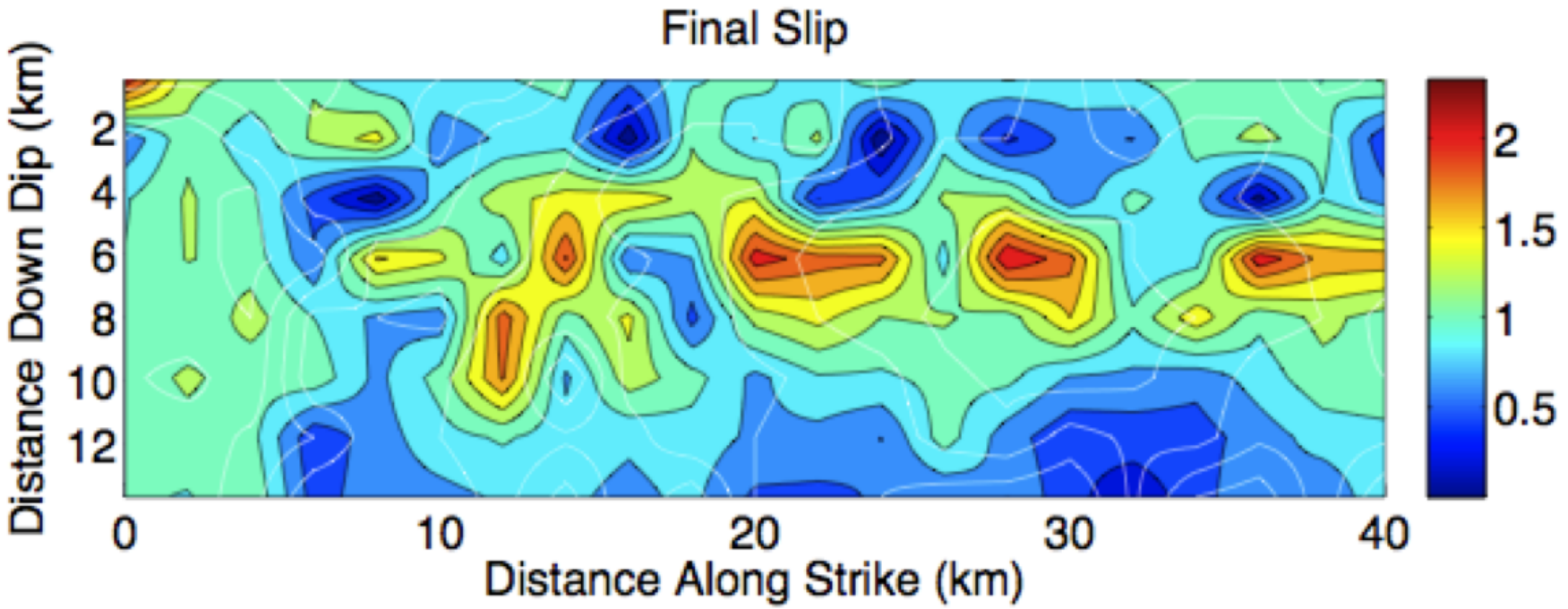
- Waveforms
  - Norm misfit (frequency and time domain)
  - Cross-correlation
  - ...

Sources

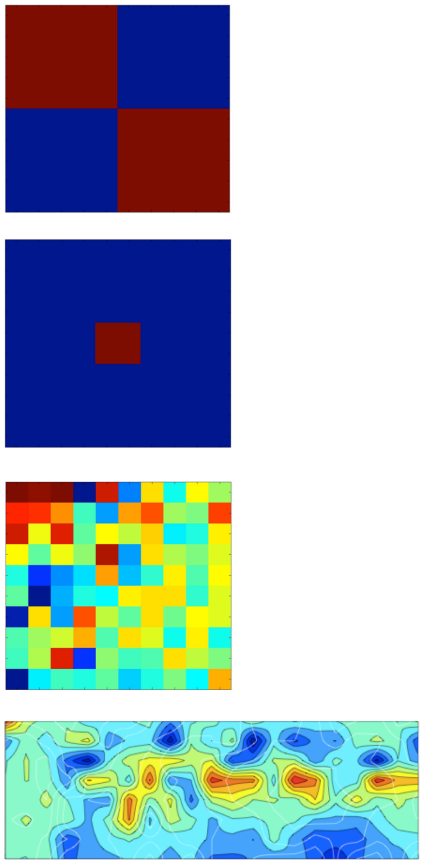

1 2 3 4 5 6 7 8 9 10
1 2 3 4 5 6 7 8 9 10

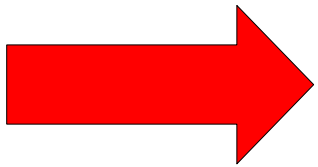

1 2 3 4 5 6 7 8 9 10
1 2 3 4 5 6 7 8 9 10

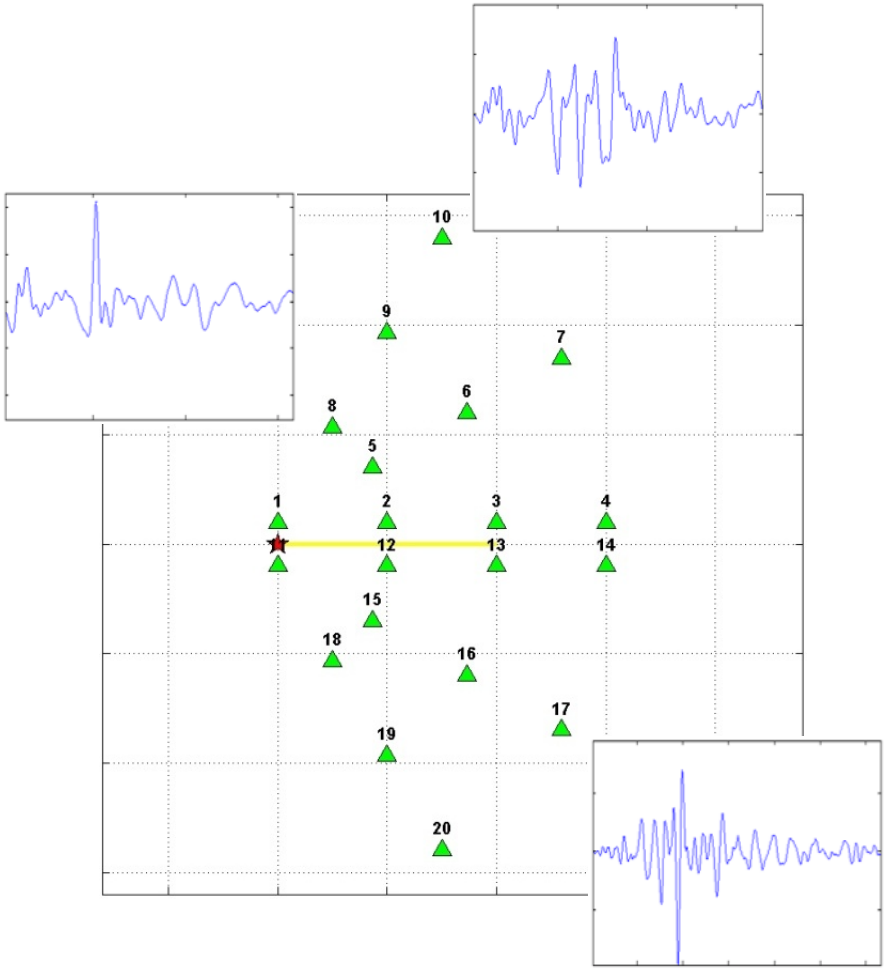

1 2 3 4 5 6 7 8 9 10
1 2 3 4 5 6 7 8 9 10


Final Slip
Distance Down Dip (km)
2
4
6
8
10
12
0
10
20
30
40
Distance Along Strike (km)
2
1.5
1
0.5

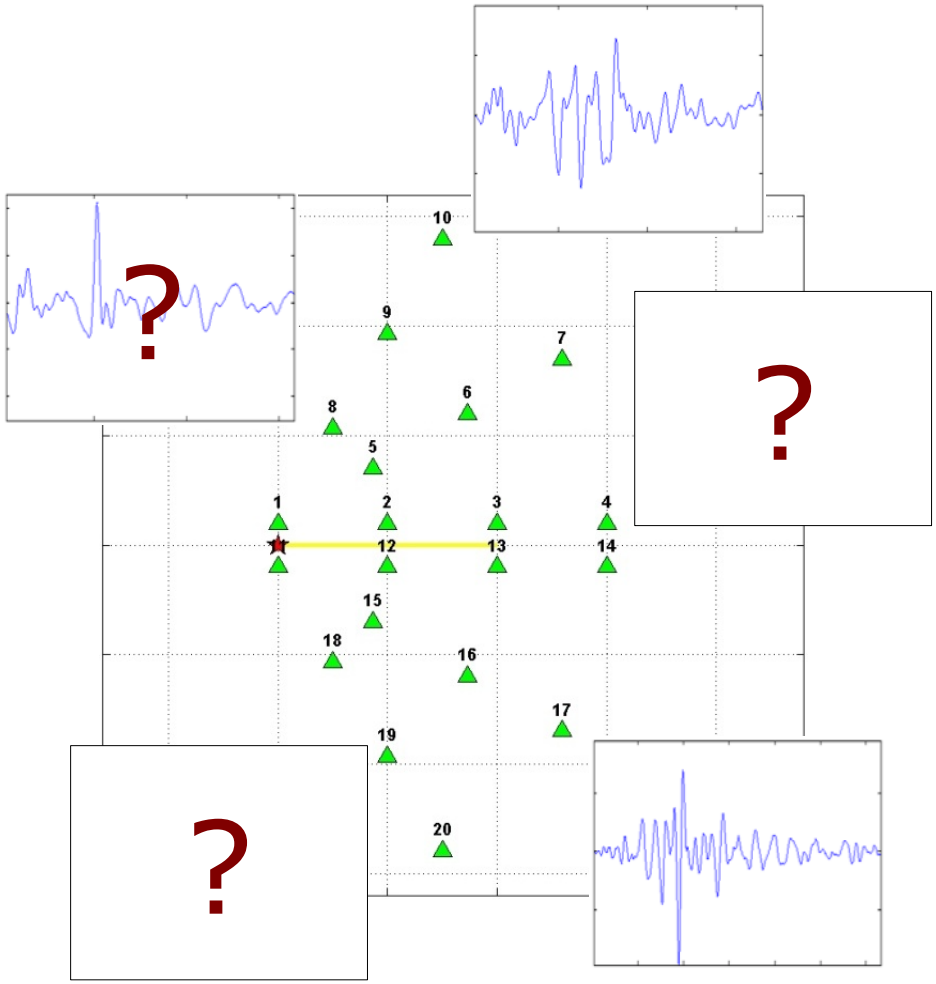
Design of an Experiment







Design of an Experiment



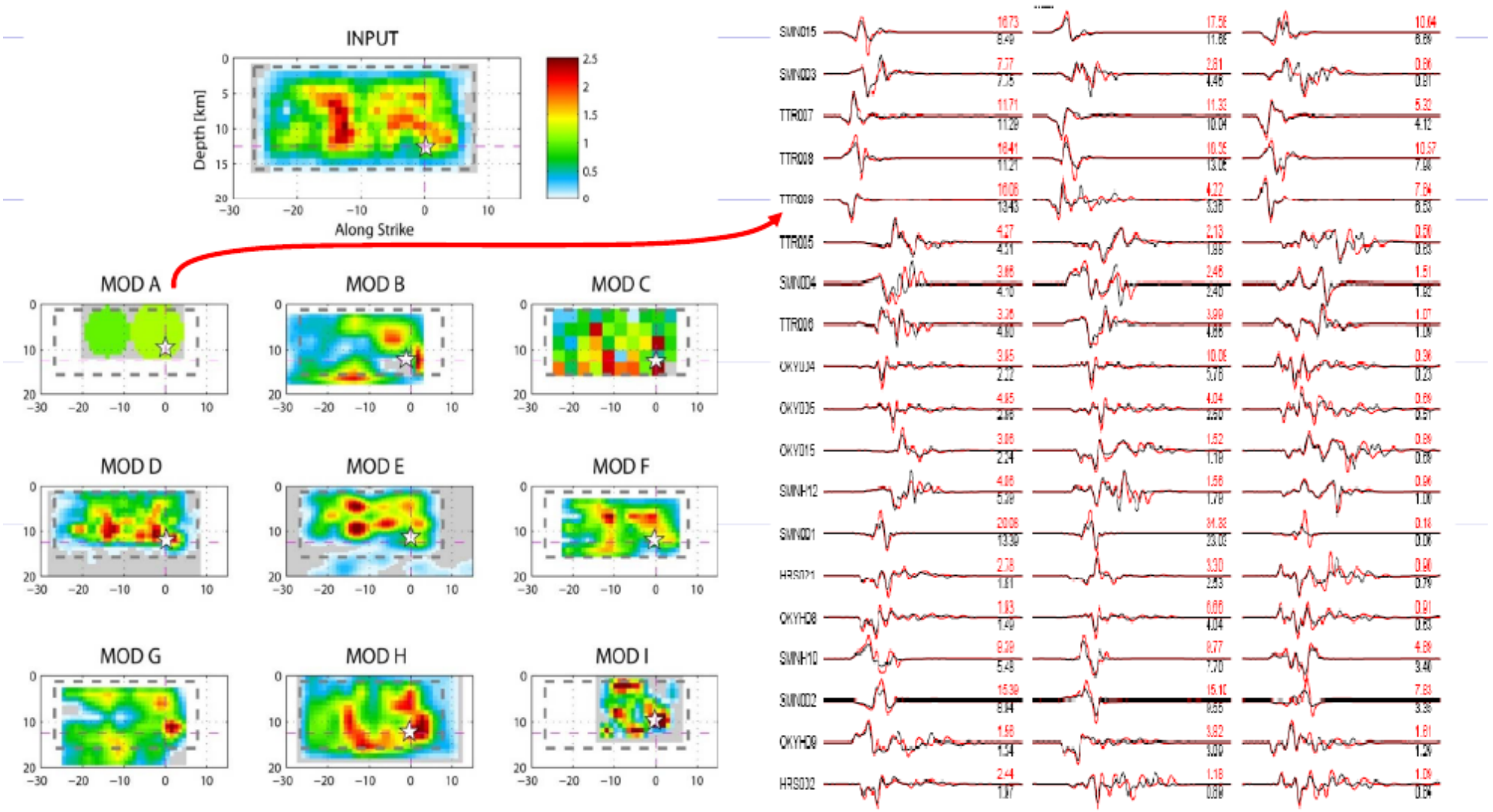
Model 1

Model 2

Model 3

Model 4

Design of an Experiment



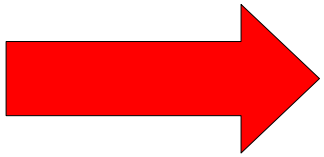
Design of an Experiment

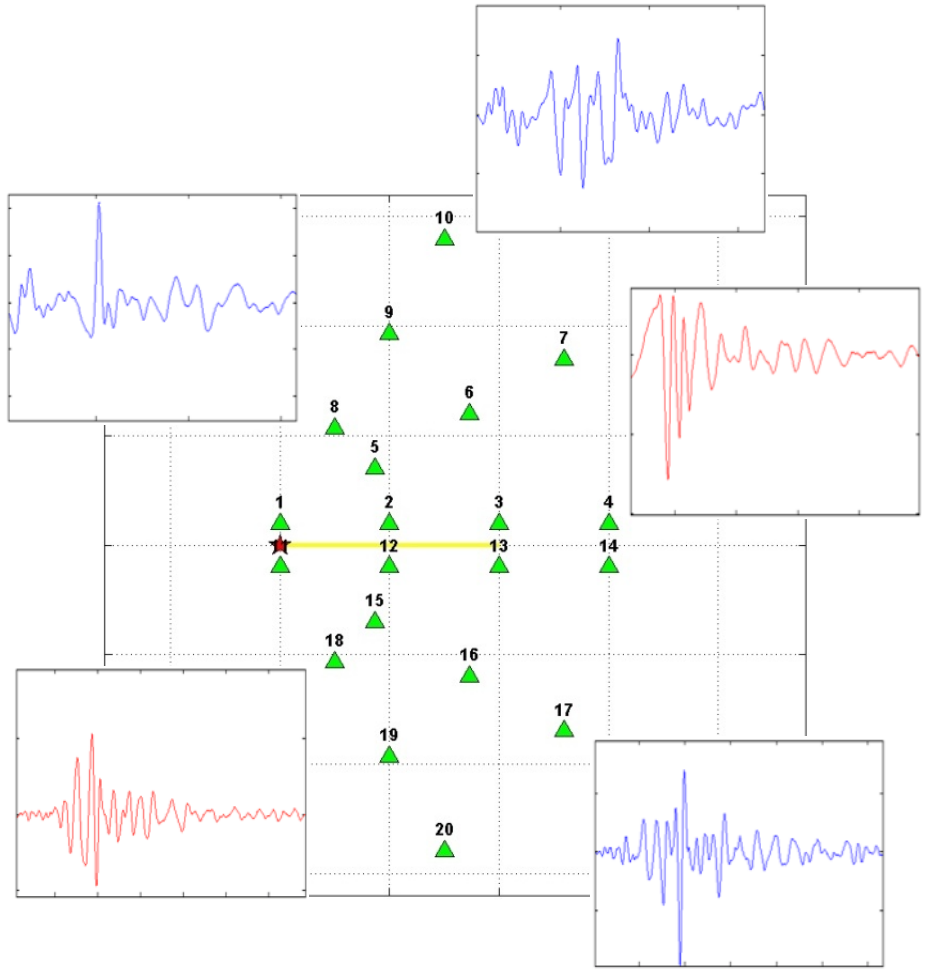
Model 1

Model 2

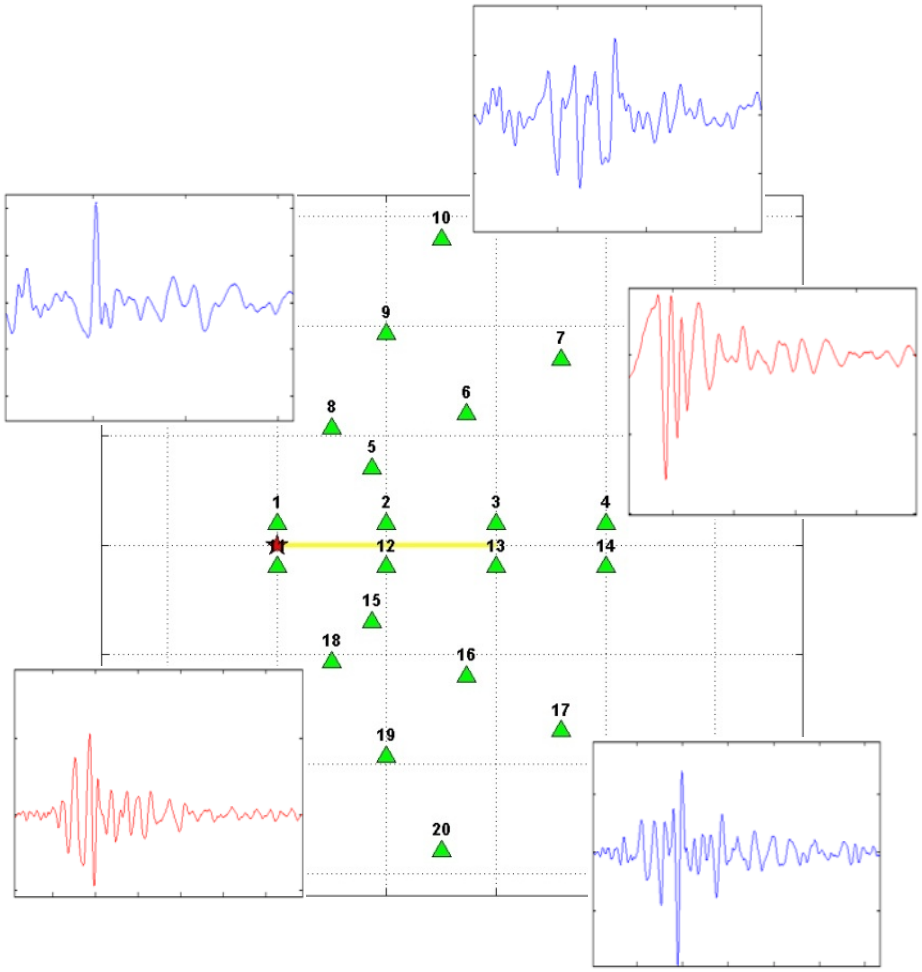
Model 3

Model 4

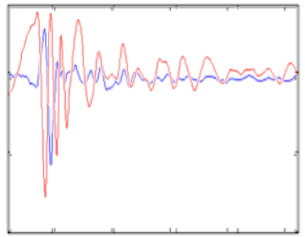




Design of an Experiment



Evaluation



Various metrics

Summary

- Generate set of source descriptions (unknown to models & modelers)
- Compute waveforms from source
- Models invert source from waveforms and compute synthetics
- Evaluate source and synthetics

Summary

- Standard file formats (input & output)
- Standardized calling syntax for models
- Scripts to glue parts to experiments