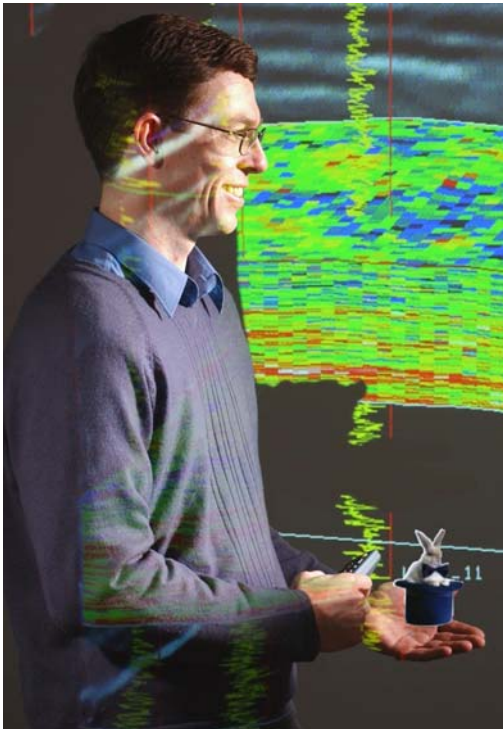


The Delivery Toolkit

James Gunning CSIRO, Melbourne

Michael Glinsky BHPB, Houston

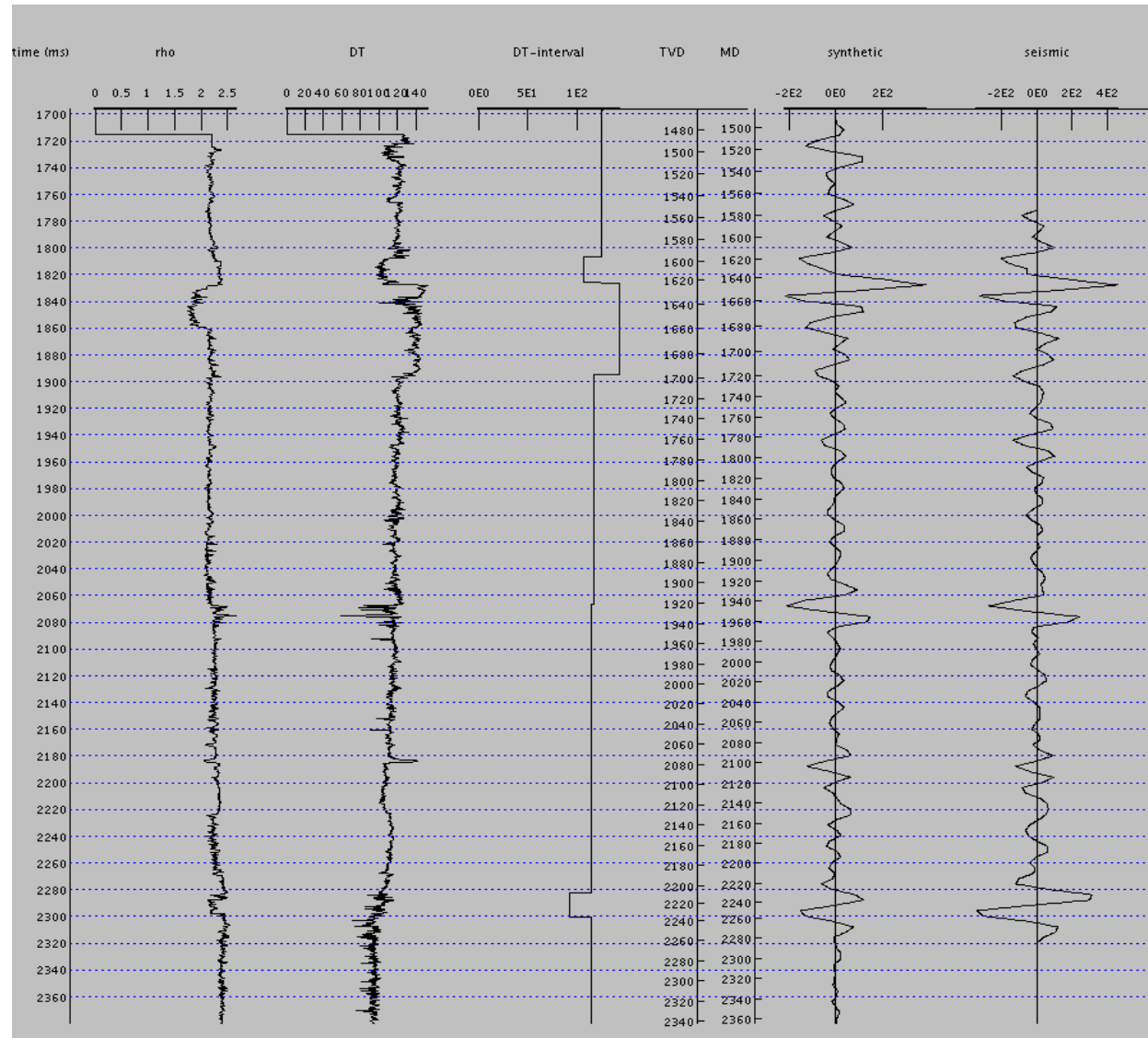
Chris White LSU, Louisiana



Components

- **WaveletExtractor**
 - Bayesian well ties and wavelet extraction
- **Delivery**
 - Bayesian trace-based seismic inversion for layer models, fluids, rock properties
- **DeliveryMassager**
 - Coercion of inversion outputs through to simulation grids

WaveletExtractor



Multiwell

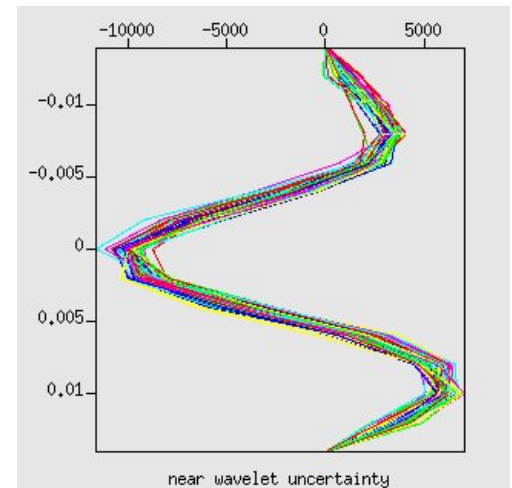
Multistack

Time-to-depth errors

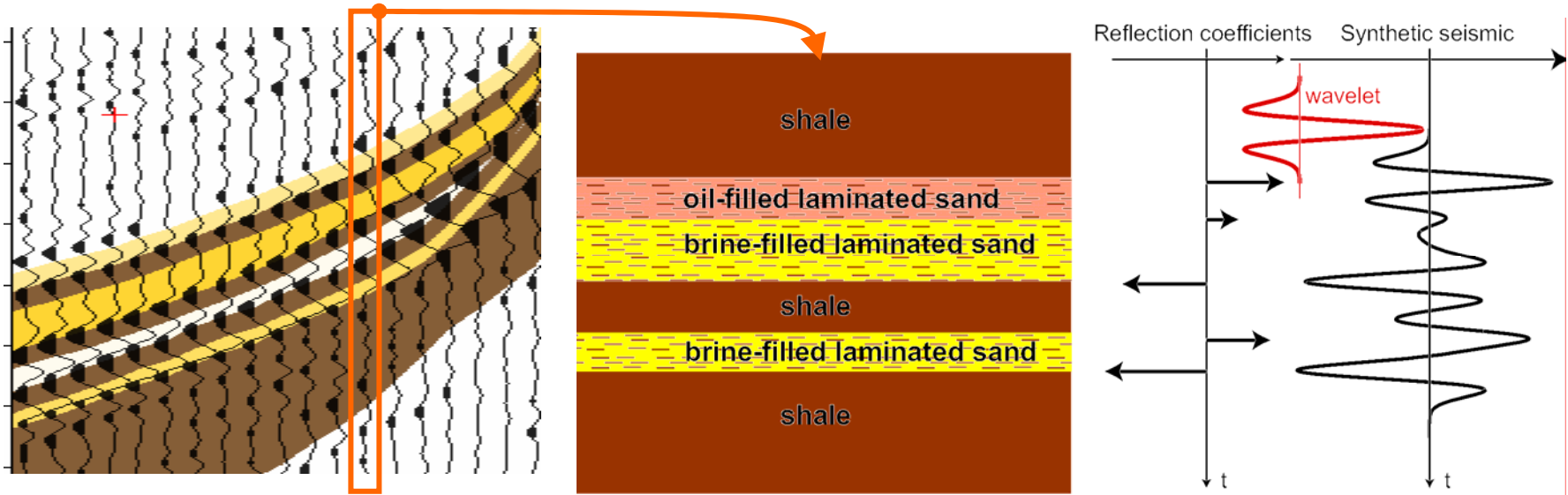
Velocity consistency

Well positioning errors

Wavelet span and uncertainty



Delivery Bayesian seismic inversion



- Fundamental parameters
 - Layer times
 - Rock properties in each layer
 - Fluid type
- Forward model
 - Reuss/Gassman for fluids
 - Convolution (multi-stack)
- Priors
 - Regional rock trends, layer “picks”
- Likelihoods
 - Synthetic seismic
 - Isopachs
- Posteriors
 - Multimodel MCMC sampling

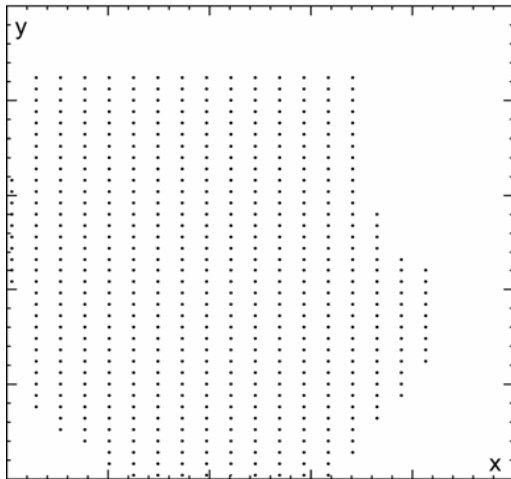
DeliveryMassager

- Talk @ 8.55 am, Tues.: “Shared Earth Modelling”

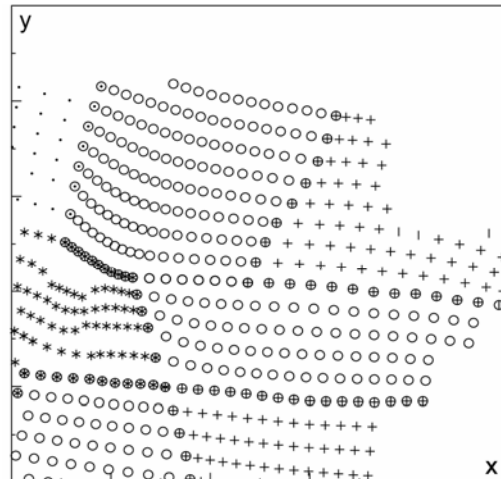
(Large) stochastic output of **Delivery**
Vertical geometry and inter-property coupling



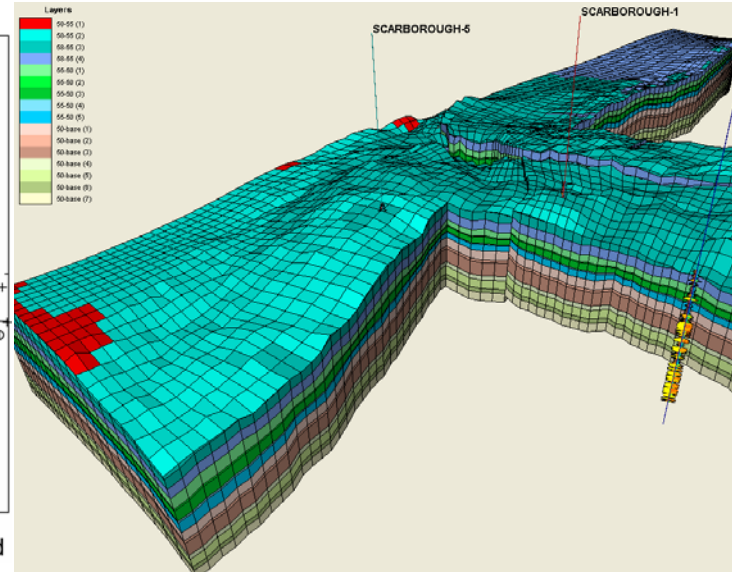
ECLIPSE
(cornerpoint) grids
Transverse correlations+well data



a) Seismic trace array



b) Cornerpoint grid corners, segment -coded



Things that might interest you

- Bayesian machinery
 - Stabilises inversion
 - Naturally integrates multidisciplinary information
 - Model comparisons: uncertainties *within* and *between* models
- Code and modular development
 - Java
 - Parallelisability
 - SU, BHPSU, BHPViewer linkages