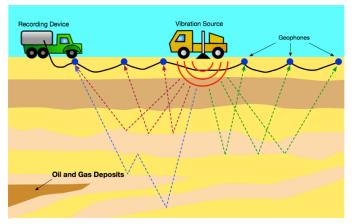


# Seismic Simulation, Survey, and Imaging (S3I) ver. 1.0

## Purpose of 531

- Provides an easy MATLAB®-based library to simulate seismic imaging
- Produces synthesized data for any given velocity model
- Targets students as well as professionals in exploration geophysics
- Provides an efficient implementation of the processing pileline for seismic imaging
- Provides a platform to build other features such as interpretation and reservoir modeling



Seismic Survey

# Structure of S31 Library

#### Seismic Simulation, Survey, and Imaging Acoustic/Elastic Wave Full Waveform Pre-stack Depth Migration Least-squares RTM Inversion Finite Difference Quasi-Newton Finite Difference Gauss-Newton Time Domain Optimization Frequency Domain Optimization Multiple Source Forward/Reverse Sparse Matrix Staggered grid Finite Parallel Computing

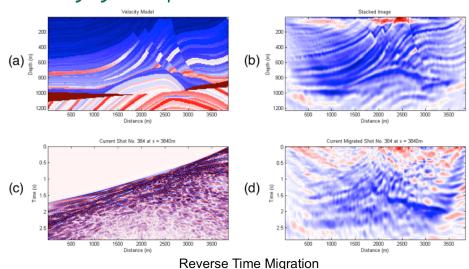
## Main Functions of S31

- Acoustic/elastic wave simulation
- Pre-stack depth migration
- Least square RTM
- Full waveform inversion

### Other Features

- Open source
- Detailed user guide
- GUI for seismic survey
- C MEX-files enhanced
- Parallel computing

## Imaging Example



- (a) True velocity model
- (c) Seismic data for one shot
- (b) Aggregated RTM result
- (d) Migrated image for one shot

Download url: cegp.ece.gatech.edu/s3i/

