

# Weiping Cao

Room 716, 135 S, 1460 E,  
Salt Lake City, UT, 84112

801-898-9513  
[caoweiping@gmail.com](mailto:caoweiping@gmail.com)

## EDUCATION

Aug. 2005—present,	PhD student in Geophysics, University of Utah.
Sept. 2002—July 2005	Master in Geophysics, China University of Petroleum
Sept. 1998—July 2002	Bachelor in Geophysics, China University of Petroleum

## EXPERIENCE

**Doctoral Research** Utah Tomography & Modeling/Migration (UTAM) Consortium  
University of Utah, Sept. 2005-present

Developed Time-Reversal Mirrors method to locate buried seismic sources, demonstrated super-resolution and super-stacking property on both synthetic and real data. This scheme is also proposed to locate trapped miners, and both synthetic and real data demonstrate the effectiveness

Developed hydro-frac estimation scheme with Time-reversal Mirrors method  
Implemented wavefront reverse-time migration scheme for 2D and 3D models and obtained encouraging results

Developed the algorithm to natural redatum VSP data to surface seismic data and validated it with both synthetic and real data

**Master Research** Key Lab of Geophysical Exploration,  
China University of Petroleum, Sept. 2002—June 2005

Developed wave equation based method to quantitatively assess acquisition geometries

### Internships

BP Advanced Seismic Imaging Team Summer 2008

Developed a novel technique to locate hydraulic fractures

Chevron Velocity Modeling Development Team Aug. 2008

Chevron Seismic Imaging and Processing Team Summer 2007

Accomplished application and analysis of a novel multiple prediction algorithm

Total Houston Geophysical Research Group Spring 2007

Developed parallelized reverse time migration (RTM) code and applied wavefront RTM scheme

Chevron Velocity Modeling Development Team Summer 2006

Developed probability methods to analyze uncertainty in tomographic velocity inversion process in migration velocity analysis

## SKILLS

Experienced using Unix/Linux operating systems, and Promax and Seismic Unix (SU).  
Proficient programming skills in Fortran, C, MPI, Matlab, familiar with C++ and Latex.  
Fluent in English and Chinese.

## HONORS AND AWARDS

Recipient of Chevron Scholarship, 2006

Recipient of First Class Scholarship in China University of Petroleum, 1998-2002

## PUBLICATIONS AND ABSTRACTS

**Weiping Cao**, et al., Demonstration of super-resolution and super-stacking properties of time reversal mirrors, Submitted to *Geophysics*.

**Weiping Cao**, et al., Demonstration of super-resolution and super-stacking properties of time

reversal mirrors, 2008, 78<sup>th</sup> Mtg.: *Ann. Internat. Mtg: Soc. of Expl. Geophys.*

Sherif Hanafy, **Weiping Cao**, Kim McCarter and Gerard T. Schuster, Locating trapped Miners using time-reversal mirrors, 2008, 78<sup>th</sup> Mtg.: *Ann. Internat. Mtg: Soc. of Expl. Geophys.*

**Weiping Cao**, Estimation of hydro-fracture source location with time-reversal mirrors, 78<sup>th</sup> Mtg.: *Ann. Internat. Mtg: Soc. of Expl. Geophys.*

**Weiping Cao**, Wavefront Wave-equation Migration, 2007, 77<sup>th</sup> Mtg.: *Ann. Internat. Mtg: Soc. of Expl. Geophys.*

**Weiping Cao**, Bangrang Di and Peicheng Gu, Migration spatial resolution estimation for stratified media with focal beams, 2004, 74<sup>th</sup> Mtg.: *Ann. Internat. Mtg: Soc. of Expl. Geophys.*

#### **REFERENCE**

Prof. Gerard T. Schuster,

Phone: (801) 581-4373, Email: [schuster@mines.utah.edu](mailto:schuster@mines.utah.edu), Fax: (801) 581-7065