

**Submittee:** Wenyuan Liao

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**Title:** Recent Developments on Numerical Methods for Seismic Inverse Problems & Applications

**Event Type:** Conference-Workshop

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**Location:**

University of Calgary

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**Dates:**

July 16- 18, 2013

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**Topic:**

Inverse problem, seismic inversion, seismic wave equation, numerical analysis, computational methods, mathematical analysis, optimization, seismic imaging, seismic wave propagation, mathematical modeling, seismic data processing, noise attenuation, image processing, seismic data interpolation.

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**Methodology:**

The conference was organized as a series of five sessions: two sessions on July 16 & 17 each and one session on July 18. Each of the first four sessions features an one-hour invited lecture presented by a leading researcher from academia or industry, followed by four 25-minute contributed talks. The last session is composed of 6 25-minute contributed talks.

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**Objectives Achieved:**

Through the 3-day conference, participants from both academia and industry presented their most recent progresses on numerical methods for seismic inverse problems and seismic data processing. Participants had extensive discussions on the current situation of numerical techniques of seismic inversion and exchanged ideas on the future trends. Participants agreed that seismic inversion is a promising technique in exploration geophysics and is worthy of increasing investment. It has been agreed that numerical method is an efficient tool in seismic inversion, should play a more important role in the industry, and deserves more attention in the future.

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**Scientific Highlights:**

Impressive presentations given by leading researchers from industry showcased the state-of-art techniques in seismic inversion and seismic data processing, and pointed out possible future research directions to the audience. Meanwhile, professors, postdoctoral fellows and graduate students presented their most recent research results on the numerical methods for seismic inversion that have great potential to improve the techniques and methods currently used in the industry. This conference also resulted in some possible collaboration between private sector(Apoterra Seismic Processing, CGG,GEO-x, etc ) and the University researchers on student and postdoc internship. A group of researchers from PIMS institutes expressed strong interest in applying for a CRG in this coming year.

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**Organizers:**

Lamoureux, Michael, Department of Mathematics and Statistics, University of Calgary// Liao, Wenyan, Department of Mathematics and Statistics, University of Calgary

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**Speakers:**

Please see the uploaded file: Conference\_Program.pdf A short bio of each keynote speaker is attached, please see the upload file: Keynote\_speakers\_bio.pdf

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**Links:**

Other information can be found at the conference website: <http://wcm.ucalgary.ca/nmsipims/>

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**File Uploads:**

Additional Upload 1: [http://www.pims.math.ca/files/final\\_report/Program\\_NMSI.pdf](http://www.pims.math.ca/files/final_report/Program_NMSI.pdf)

Additional Upload 2: [http://www.pims.math.ca/files/final\\_report/Keynote\\_speakers\\_bio.pdf](http://www.pims.math.ca/files/final_report/Keynote_speakers_bio.pdf)

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