



# The Rock Record - April 2016

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Please contribute to the SGS Newsletter

The SGS Newsletter is produced by the SGS executive. Letters, announcements, notices, comments, photos, news and information about SGS members, etc. are always welcome. Call an executive member or write to us at:

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## Saskatchewan Geological Society Luncheon Talk

**Wednesday, May 4<sup>th</sup>, 2016**

*Geophysical inversion of gravity and  
magnetic data for prediction of  
lithological units*

Omid Mahmoodi  
SK Geological Survey

### VENUE:

The Artful Dodger, 1651 11th Ave

Lunch: 11:45 a.m.

Talk: 12:15-1:00 p.m.

### For lunch the cost is:

No Lunch (Talk only): \$5.00

Members: \$15.00

Student Members: \$10.00

Non-Members: \$20.00

Please RSVP to Jason Cosford at [cosford@jdmollard.com](mailto:cosford@jdmollard.com)  
before 12 noon, Monday, May 2, if you are going to have lunch.

## **DETAILS OF May 4<sup>th</sup> TALK – Omid Mahmoodi**

### **ABSTRACT – Geophysical inversion of gravity and magnetic data for prediction of lithological units**

Inversion methods are an important means to use geophysical data to explore for deep ore bodies and investigate the geology at depth. Three dimension inversion methods estimate a three-dimensional discrete physical property distribution which can explain the observed geophysical field data. When there are no constraints applied to the data the estimated models may look geologically unrealistic. Prior geological information such as drill-holes or a geological models can be used to constrain the inversion algorithms to derive a physical model which satisfies the expected geology and the geophysical data.

The obtained 3D inversion models are a representation of the distribution of physical properties within the volume of interest, and they can be converted to a geological model. This process is most successful when the physical characteristics of rock types shows distinct changes when the lithological units change. In order to convert the physical models to lithology, a link between the physical property data and the lithological data is required, which can be provided by accurate physical property measurements.

### **BIOGRAPHY – Omid Mahmoodi, Geophysicist, SK Geological Survey**

PhD in Exploration Geophysics, Laurentian University, Sudbury, ON. 2012-2015.

M.Sc in Mining Engineering-Exploration, University of Tehran, Iran, 2009-2012.

B.Sc. in Mining Engineering-Exploration, University of Yazd, Iran, 2005-2009.

Student Geophysicist, 2013, KGHM International Ltd.

Resource modelling, 2011-2012. Dorsa Ltd., Iran.



## President's Message

Another month has passed and it's been another eventful one for the Society. The first news of note is that our Secretary, Bernadette Knox, has recently left Saskatchewan and has taken a job with the Northwest Territories Geological Survey. I'd like to take this opportunity to thank Bernadette for her contribution to the Society over the past ~14 months and to wish her well with this new endeavour! Of course, her departure has unfortunately left a vacancy in the Executive, but I'm pleased to say that it has recently been filled by Omid Mahmoodi. A geophysicist that has recently joined the SK Geological Survey, Omid was approved as the new SGS Secretary by unanimous vote at the most recent Executive meeting. Omid will also be giving the upcoming SGS luncheon talk next Wednesday at the Artful Dodger (see details above), so please come out to meet him and welcome him to Regina and to the Executive.

Another recent event of note for the Society was the joint Public Lecture and Annual School Lecture. The lecture series was presented by Dr. William McKinnon, a planetary scientist at Washington University in St. Louis (MO) and deputy lead of the geology team for NASA's New Horizons Mission. The Public Lecture (April 19<sup>th</sup>) was attended by over 200 people at the Royal Saskatchewan Museum, and the 3 school lectures over the following two days – two at Miller High School and one at O'Neill High School - were attended by over 1500 elementary and high school students. In the apt words of our vice-president: *"If this is not outreach, I do not know what it is!!!!"* Dr. McKinnon was a great speaker and the details of the mission and incredible new images of Pluto he discussed sparked the imagination of young and old alike. A big thank you and congratulations goes out to all of the SGS Executive members, committee members, and volunteers that were involved in organizing the lectures and for making it such a successful event. And thanks also to all of you that came out to see the lecture and support the event!

Ryan Morelli



## OTHER NEWS AND EVENTS

### Membership Renewals PLEASE

SGS membership is on a calendar year basis. It is now time to renew your membership for 2016. The most convenient way to renew your membership is to do it online and pay by Paypal; you do not need a PayPal account to do this: <http://sgshome.ca/membership>.

### Annual SGS Field Trip

We are pleased to announce that the 2016 SGS field trip will run from August 18th-22nd and will be taking place in the Jasper-Hinton area. The trip will be led by Dr. Ben Rostron from the University of Alberta. Keep those dates open! Further details on the trip and registration will be coming shortly, so stay tuned to our website.

### Upcoming Talks

Here is what's in the works for the months to come, submitted by Jason Cosford and Mike Thomas.

List of Some Upcoming Speakers:

- 1) Omid Mahmoodi (May 4th)
- 2) Dr. Lore Doig (May 26<sup>th</sup>?)
- 3) Colin Card, SGS (date yet to be confirmed)
- 4) Kate MacLachlan, APEGS (date yet to be confirmed)
- 5) Mike Demuth - U of S
- 6) Shayne McDonald - U of R

Suggestions for other potential speakers are always welcome. Please contact either Jason Cosford or Mike Thomas with your ideas.

### News from the D.M. Kent Club

The D.M. Kent Club would like to thank all of the outgoing executives for all their time and effort this year. We are thrilled to announce our new executive committee has been chosen. The new execs are:

John Kelley - president  
Dallas Dixon - vice president  
Anastasia Comptois Poissant - communications  
Adrianna Faye - social  
Arin Kitchen - treasurer  
Asnoldo Prieto – secretary

We look forward to another great year next year!



OUR 2016 CORPORATE MEMBERS:

