Drones Applied to Geophysical Mapping

SEG Annual Meeting 2017 Post Conference Workshop produced by the SEG Near Surface Technical Section

Date: September 29, 2017 Location: George R Brown CC - Houston TX

Registration fees: SEG Member: \$100 Non-SEG Member: \$200 Students: \$50.00

To register visit: http://seg.org/Annual-Meeting-2017

Small unmanned aerial systems (sUAS) applied to geophysical mapping promise <u>more data in</u> <u>less time at reduced risk and lower cost</u> which, in the coming years, will change the manner in which geophysical data are collected. However, there are many challenges and limitations that must be addressed not the least of which is aircraft performance limitations and the lack of geophysical sensors suitable for use with a sUAS.

The objective of this workshop is to bring together experts in fields of geophysical data acquisition and small Unmanned Aerial Systems (sUAS) to discuss how drones are currently being deployed to acquire or assist in the acquisition of geophysical data for resource exploration as well as subsurface characterization for environmental remediation and infrastructure development projects.

The following is a partial list of titles and speakers:

An Introduction to this workshop - John Lane, USGS and Ron Bell, IGS, LLC

Drones and Drone Technology - Robert LeFebrve, NOVAerial Robotics Inc.

UAS Magnetometers: A review - Ron Bell, International Geophysical Services, LLC

MFAM: Miniature Atomic Magnetometer for Autonomous Magnetic Surveys - Rahul Mhaskar, Geometrics, Inc.

- Case History: Application of UAS Magnetometry to Mineral Exploration Michael Burns, Pioneer Aerial Surveys Ltd.
- **Drone Magnetic and LiDAR Surveys for Locating Legacy Oil and Gas Wells** Richard Hammack, Garrett Veloski, and James Sams III, National Environmental Testing Laboratory
- **Unmanned aerial vehicles and their applications in exploration and mining** Thomas Stanley-Jones, Aerial Imaging Resources
- **Examples of Autonomous Aeromagnetic Surveys with a Vector Magnetometer** Johannes Stoll, Mobile Geophysical Technology
- Case History: UAV Magnetometry for Mineral Exploration Jean-Christophe Ricard, Devbrio Geophysique Inc.
- **Comparison of Ground Magnetic and Low Altitude Aeromagnetic Data** Ron. Bell, International Geophysical Services, LLC

The final hour of the workshop will be a Panel Discussion on Future Developments