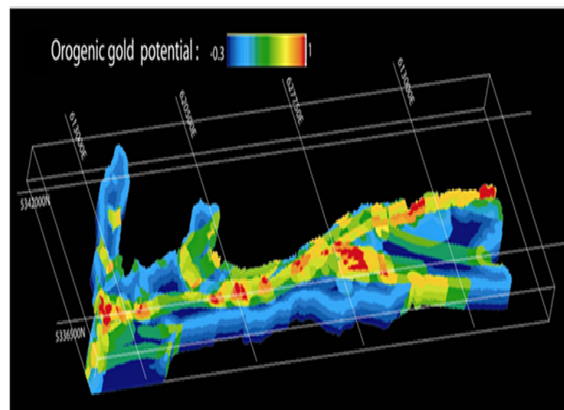




*Workshop on: Mineral Resources
Potential Maps: A Tool for Discovering
Future Deposits*

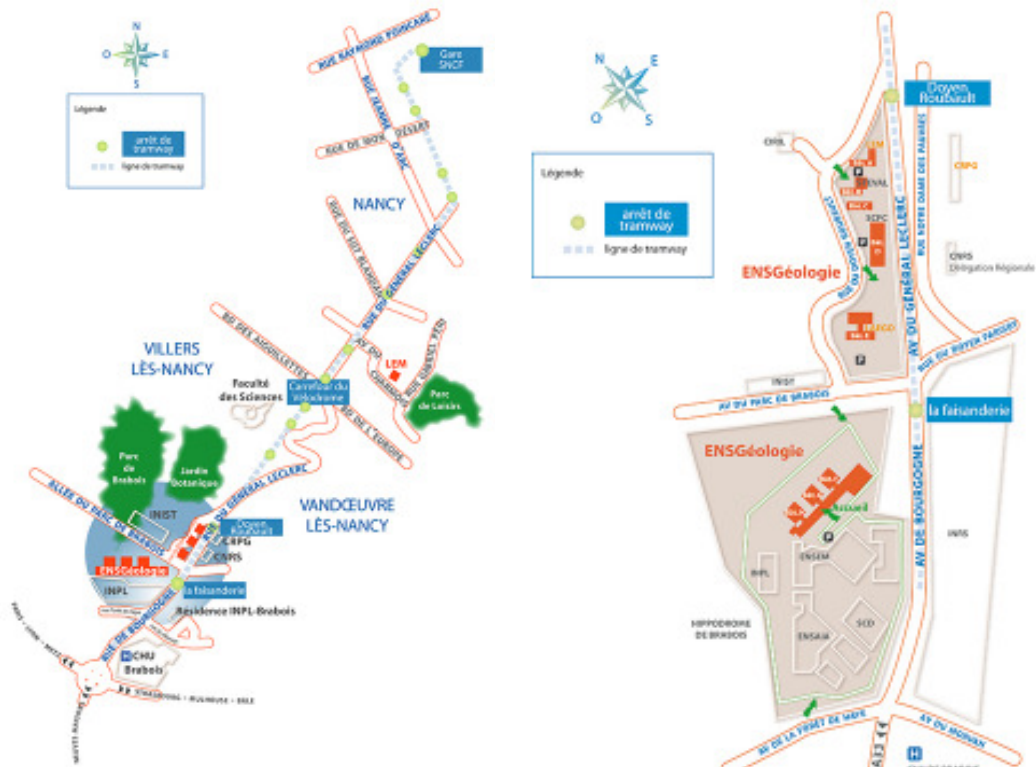
Abstract Book

12th - 14th March, 2012
Nancy, France
INPL-Nancy - ENSG
Rue du Doyen Marcel Roubault
F54501 Vandoeuvre-lès-Nancy, France



Potential orogenic gold occurrences, Abitibi, Québec,





- ENSG
École Nationale Supérieure de Géologie Rue du Doyen Roubaud - 40F-54901 Vandœuvre-lès-Nancy
- LAEGO
Site Internet du LAEGO
- SCFC
École nationale supérieure de Géologie
- STEVAL
École nationale supérieure de Géologie
- LEM
Site Internet du LEM
- A Bât. A - LEM
Site Internet du LEM
- D Bât. D - CPP (Cycle Préparatoire Polytechnique)
École nationale supérieure de Géologie
- B Bât. B - STEVAL
École nationale supérieure de Géologie
- C Bât. C - STEVAL
École nationale supérieure de Géologie
- E Bât. E - LAEGO
Site Internet du LAEGO
- F Bât. F - ENSG
École nationale supérieure de Géologie
- G Bât. G - ENSG
École nationale supérieure de Géologie
- H Bât. H - ENSG
École nationale supérieure de Géologie
- P Parking

J CRPG Centre de Recherche Pétrographique et Géochimique



PREFACE

The scope of this workshop is to provide practitioners from the exploration and mining industry theoretical concepts in predictive methods for defining potential maps. The objectives of the workshop is to debate advanced 3&4D predictive methods to derive potential maps in mineral exploration for strategic metals that are currently not extracted in Europe. This includes all types of information, GIS database, surface surveys, 3&4 models, etc. The workshop focuses both on advanced theoretical methods including weight of evidence, characteristic analysis, probability maps but also on successful and less successful case study stories. It aims at putting together specialists from all origins in a unique three day meeting to discuss future trends and success & limits in applying these predictive methods at a mineral exploration stage.

Several Keynote speakers recognized as experts in their field from different countries including Europe, Canada, US, and Australia will debate on important topics related to exploration. Open free time for round tables and discussion are included in the scientific programs. These discussions will be synthesized during the conference by conveners.

The results of the workshop are planned to be published within months after the workshop.

ProMine is an EU FP7 research project working to integrate the mapping of metal and mineral resources across the Union, to produce the first pan-European GIS-based database. On from this, new sustainable extraction and processing technologies are being developed along with a range of new nano products manufactured from European sourced raw materials. The ProMine project seeks to employ an inclusive and consultative approach, with an aim to improve the image of mining whilst reinforcing industrial links. Particular attention is being paid to long term sustainability and environmental concerns, reflecting current directives from the Raw Materials Initiative.

The project commenced on May 1st 2009, and is coordinated by the Geological Survey of Finland (GTK), and made up of 27 partners in 11 countries working closely together over a four year period.

The workshop has been financially supported by the contribution of the ProMine European project, the University de Lorraine, The TU Freiberg, the Ecole National Supérieure de Géologie de Nancy, and the CNRS Centre Nationale de la Recherche Scientifique. We are pleased to acknowledge these Institutes for their respective contribution.

We wish all participants a fruitful productive workshop and that they will enjoy the Nancy region despite its uncertain climatic issues.

The organizers;

Prof. H. Schaeben
Dr. J.J. Royer

Scientific Committee

Daniel Cassard	BRGM, France
Steinar Ellefmo	TNU, Norway
Gaál Gabor	GTK, Finland
Vesa Nykanen	GTK, Finland
Jean-Jacques Royer	INPL-Nancy, France
Richard Sinding Larsen	TNU, Norway
Helmut Schaeben	TUBAF, Germany
Pär Weihed	Lulea Univ., Sweden

Organizers

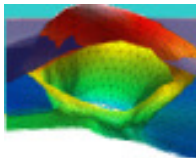
Jean-Jacques Royer (Centre National de la Recherche Scientifique, CNRS),

Helmut Schaeben (Geoscience Mathematics and Informatics Group, TU Bergakademie Freiberg).

VENUE

The workshop has been hold at:

Ecole Nationale Supérieure de Géologie,
Bat G, Rue du Doyen Marcel Roubault, BP 40,
F 54501 Vandoeuvre-Lès-Nancy.
France



PROGRAM

ProMine Workshop on Mineral Resources Potential Maps

Monday 12th March, 2012

- 8:30 9:00 *Registration*
- 9:00 10:15 *Welcome of the Participants*
Promine Project - a new approach to assessment and use of mineral resources
Gabor Gaal - GTK - Finland
Eramine - Policy in Mineral Resources
Bruno Goffé and Olivier Vidal - CNRS - France
Mineral Resource 21
Frederic Villieras
- 10:15 10:45 *Break*
- 10:45 11:30 *Keynote speaker*
ProMine pan-European Mineral Deposit database: a new dataset for assessing primary mineral resources in Europe - *Daniel Cassard (BRGM, France), et al.*
- 11:30 11:50 Mineral targeting at continental scale - *Tourlière B. (BRGM, France), et al.*
- 11:50 12:10 Statistical distribution of the uranium resources in the Variscan hydrothermal uranium deposits of Western Europe - *Michel Cuney (CREGU, France) and Jean-Jacques Royer (CNRS, France)*
- 12:10 12:45 *Round Table & Discussion Panel - Moderators: R. Sinding-Larsen & N.D. Arvanitidis*
Exploiting database and prediction maps - What should we need in the database for generating potential maps?
- 13:00 14:00 *Lunch*
- 14:00 14:45 *Keynote speaker*
Should Mineral Resources Potential Maps be Deposit Model- or Data driven? Lessons from 25 years of exploration - *Richard Sinding Larsen (NTU, Norway)*
- 14:45 15:15 Policies, exploration activities and future mining in Norway - *Steinar L. Ellefmo (NTU, Norway)*
- 15:15 15:45 *Break*
- 15:45 16:30 *Round Table & Discussion Panel - Moderators: Helmut Schaeben & Daniel Cassard*
Method and data requirement - What sort of prediction methods must be used for the pan European prediction maps?
- 16:30 16:45 *Moving to CRPG*
- 16:45 18:00 *Visit of the SHRIM and Rare Gas Isotope Lab CRPG- M. Chaussidon & B. Marty*

18:00 19:30 *Ice Breaker*

20:00 22:00 Dinner (open)

PROGRAM (Continue)

ProMine Workshop on Mineral Resources Potential Maps

Tuesday 13th March, 2012

- 8:30 8:45 *Registration*
- 8:45 9:30 *Keynote speaker*
Prediction of gold and nickel-copper deposits in central Finnish Lapland - Verification after 28 years - *Gabor Gaál and Kalevi Rasilainen (GTK, Finland)*
- 9:30 9:50 *Are orogenic gold deposits spatially predictable? - Royer (CNRS, France) et al.*
- 9:50 10:15 *Probabilistic analysis of spatial relationships between gold deposits and crust structures: development and applications to the Yenissei Ridge (Russia) - C. Gumiaux (CNRS/INSU, France) et al.*
- 10:15 10:45 *Break*
- 10:45 11:30 *Keynote speaker*
A preliminary look at a systems approach to mineral exploration planning - *Donald A. Singer (USGS, USA)*
- 11:30 11:55 *The comparison of ore body shapes and regional deformation patterns as a base for prospectivity mapping in the Skellefte Mining District, Sweden - Tobias E. Bauer (Lulea Univ., Sweden) et al.*
- 11:55 12:20 *Kinematic framework of Neoproterozoic gold mineralization in Finland - constraints from bedrock mapping and numerical simulations - Peter Sorjonen-Ward (GTK, Finland) et al.*
- 12:20 13:00 *Round Table & Discussion Panel - Moderator: Gabor Gaal & Bo Møller Stensgaard*
3&4D prediction methods in known mature mining district for Promine: how to account for mineral deposit geologists' knowledge in making potential map?
- 13:00 14:00 *Lunch*
- 14:00 14:45 *Keynote speaker*
Some Mathematical and Statistical Aspects of Potential Modeling - *Svetlana Arkhipova (TUBAF, Germany) et al.*
- 14:45 15:15 *Mineral potential mapping using artificial neural networks and GIS with advangeo® – Theoretical background and case studies - Andreas Barth (Beak Consultants GmbH, Germany) et al.*
- 15:15 15:45 *Break*
- 15:45 16:30 *Round Table & Discussion Panel - Moderators: Chang-Jo Chung & Jean-Jacques Royer*
How to validate predictions potential maps and to account for uncertainty?
- 16:30 16:45 *Moving to Pilot Plant*

16:45 18:00 Visit of the Pilot Plant - Lev Filipov and Frederic Diot

18:00 19:30 Ice Breaker

20:00 22:00 Dinner

PROGRAM (Continue)

ProMine Workshop on Mineral Resources Potential Maps

Wednesday 14th March, 2012

- 8:30 9:15 *Keynote speaker*
Ideas and tools for generating mineral potential maps from mineral deposit models -
Chang-Jo Chung and James M. Franklin (Geological Survey Ottawa, Canada)
- 9:15 9:45 Possibilities of 3D mineral potential mapping in the Vihanti area - *Eeva-Liisa Laine*
(*GTK, Finland*)
- 9:45 10: 05 Restoration: a Tool for Predicting Mineral Potentialities. Application to the
Kupferschiefer Lubin Area, Poland - *Pablo Mejia (ENSG-CRPG, France) et al.*
- 10:05 10:35 *Break*
- 10:35 11:20 *Keynote speaker*
Using 3D/4D modeling tools in exploration for gold-polymetallic potential areas in
Greece - *Arvanitidis N.D. (Geological Survey, Greece) et al.*
- 11:20 11:45 Porphyry deposits genesis along the western Tethyan suture: insights from a
paleogeographic approach - *Bertrand G. (BRGM, France)*
- 11:45 12:10 Exploring the Lavatrafo area, Madagascar in the 90's: a discovery history of unusual PGE
deposits - *Maryse Ohnenstetter (CRPG, France)*
- 12:10 12:45 *Round Table & Discussion Panel - Moderator: Donald Singer & Steinar L. Ellefmo*
Solving conflict between societal issues, land use and mining. How to disseminate results
among the mining companies?
- 13:00 14:00 *Lunch*
- 14:00 14:45 *Keynote speaker*
Predictive Mineral Potential Mapping in Greenland: challenges, case stories, experience
and future - *Bo Møller Stensgaard (Geological Survey of Denmark and Greenland) et al.*
- 14:45 15:15 Hydrothermal polymetallic vein-type mineralization, Sainte Marie-aux-Mines, France -
Yaser Hafeznia (CRPG, France) et al.
- 15:15 15:45 *Break*
- 15:45 16:30 *Feed back report of discussion Panels - Coordinator: R. Sinding Larsen + all*
moderators
What next? Specific action agenda and meetings
- 16:30 16:45 *Closing Session*
