

5th International Conference on Inter-Disciplinary Underground Science and Technology

(i-DUST 2014)

E3S Web of Conferences Volume 4 (2014)

**Apt, France
5 – 7 May 2014**

Editors:

**P. Febvre
E. Pozzo di Borgo**

K. Coulie-Castellani

ISBN: 978-1-63439-763-6

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

This work is licensed under a Creative Commons Attribution license:
<http://creativecommons.org/licenses/by/2.0/>

You are free to:

Share – copy and redistribute the material in any medium or format.

Adapt – remix, transform, and build upon the material for any purpose, even commercial.

The licensor cannot revoke these freedoms as long as you follow the license terms.

Under the following terms:

You must give appropriate credit, provide a link to the license, and indicate if changes were made.

You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use. The copyright is retained by the corresponding authors.

Printed by Curran Associates, Inc. (2015)

For additional information, please contact EDP Sciences – Web of Conferences
at the address below.

EDP Sciences – Web of Conferences
17, Avenue du Hoggar
Parc d'Activité de Courtabœuf
BP 112
F-91944 Les Ulis Cedex A
France

Phone: +33 (0) 1 69 18 75 75

Fax: +33 (0) 1 69 28 84 91

contact@webofconferences.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

LARGE EXCAVATIONS AND MULTI-DISCIPLINARY STUDIES IN DEEP UNDERGROUND LABORATORIES	1
<i>J. Wang</i>	
PHASE III (AND MAYBE IV) OF THE SIMPLE DARK MATTER SEARCH EXPERIMENT AT THE LSBB	5
<i>T. Girard, A. Ramos, I. Roche, A. Fernandes</i>	
MUON TELESCOPE BASED ON MICROMEAS DETECTORS: FROM DESIGN TO DATA ACQUISITION	11
<i>I. Lazaro, F. Hivert, J. Decitre, R. Oliveira, O. Pizzirusso, H. Muller, F. Jeanneau, I. Giomataris, S. Gaffet</i>	
SIMULATIONS OF THE MUON FLUX SENSITIVITY TO ROCK PERTURBATION ASSOCIATED TO HYDROGEOLOGICAL PROCESSES	16
<i>F. Hivert, I. Lazaro, J. Busto, J. Ernenwein, J. Brunner, J. Decitre, X. Martin, S. Gaffet</i>	
THE MATTER-WAVE LASER INTERFEROMETER GRAVITATION ANTENNA (MIGA): NEW PERSPECTIVES FOR FUNDAMENTAL PHYSICS AND GEOSCIENCES	20
<i>B. Canuel, L. Amand, A. Bertoldi, W. Chaïbi, R. Geiger, J. Gillot, A. Landragin, M. Merzougui, I. Riou, S. Schmid, P. Boyer</i>	
OBSERVATION OF LIGHTNING-INDUCED SIGNALS ON THE SUMMIT OF LA GRANDE MONTAGNE: HF MEASUREMENTS	26
<i>I. Kolmasova, O. Santolik, L. Uhler, R. Lan</i>	
CORRELATION BETWEEN FLUXGATE AND SQUID MAGNETOMETER DATA SETS FOR GEOMAGNETIC STORMS	31
<i>T. Matladi, E. Saunderson, D. Gouws, T. Phiri, C. Kwisanga, C. Fourie</i>	
TOWARDS AUTOMATED REMOTE SQUID STATIONS FOR GEOMAGNETIC MEASUREMENTS	36
<i>E. Lochner, D. Gouws, E. Saunderson, A. Kilian, C. Fourie</i>	
MONITORING GEOMAGNETIC SIGNALS OF GROUNDWATER MOVEMENT USING MULTIPLE UNDERGROUND SQUID MAGNETOMETERS	42
<i>S. Henry, E. Borgo, C. Danquigny, A. Cavaillou, A. Cottle, S. Gaffet, M. Pipe</i>	
STRUCTURAL AND HYDRAULIC PROPERTIES OF A SMALL FAULT ZONE IN A LAYERED RESERVOIR	47
<i>P. Jeanne, Y. Guglielmi, F. Cappa</i>	
THE SIMPLE DARK MATTER SEARCH: PRESENT AND FUTURE	52
<i>M. Felizardo, T. Girard, A. Fernandes, T. Morlat, J. Puibasset, A. Ramos, J. Marques, A. Kling, F. Carvalho, M. Prudencio, A. Gouveia, R. Marques, M. Auguste, D. Boyer, A. Cavaillou, J. Poupenny, C. Sudre</i>	
NEUTRON BACKGROUND ESTIMATES IN GESA	57
<i>A. Fernandes, M. Felizardo, T. Girard, A. Kling, A. Ramos, J. Marques, M. Prudencio, R. Marques, F. Carvalho</i>	
IMAGING THE LSBB ENVIRONMENT FROM GPR DATA, ALONG THE TUNNEL AND FROM THE SURFACE	63
<i>G. Senechal, D. Rousset, S. Carriere, K. Chalikakis, C. Danquigny, C. Emblanch</i>	
OBSERVATION OF LIGHTNING-INDUCED SIGNALS ON THE SUMMIT OF LA GRANDE MONTAGNE: PART 2 - INTERFEROMETRY AND VLF MEASUREMENTS	78
<i>O. Santolik, I. Kolmasova, L. Uhler, R. Lan</i>	
GEOPHYSICAL INVESTIGATIONS AT THE LSBB	91
<i>G. Senechal, K. Chalikakis, S. Carriere, H. Zeyen, C. Danquigny, C. Emblanch</i>	
Author Index	