

CNR*13 – Fourth International Workshop on Compound Nuclear Reactions and Related Topics

EPJ Web of Conferences Volume 69 (2014)

**Mareias, Brazil
7-11 October 2013**

Editors:

Brett V. Carlson

Airton Deppman

ISBN: 978-1-63266-563-8

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. (2014)

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

CHAOTIC BEHAVIOR OF THE COMPOUND NUCLEUS, OPEN QUANTUM DOTS AND OTHER NANOSTRUCTURES	1
<i>M. S. Hussein, J. G. G. S. Ramos</i>	
ROLE OF THE HOYLE STATE IN THE $^{12}\text{C}+^{12}\text{C}$ FUSION AT LOW ENERGIES	13
<i>P. Descouvemont, M. Assuncao</i>	
TOWARD A SELF-CONSISTENT AND UNITARY REACTION NETWORK FOR BIG-BANG NUCLEOSYNTHESIS	25
<i>Mark W. Paris, Lowell S. Brown, Gerald M. Hale, Anna C. Hayes-Sterbenz, Toshihiko Kawano, George M. Fuller, Evan B. Grohs</i>	
DERIVATION OF CAPTURE AND REACTION CROSS SECTIONS FROM EXPERIMENTAL QUASI-ELASTIC AND ELASTIC BACKSCATTERING PROBABILITIES	40
<i>V. V. Sargsyan, G. G. Adamian, N. V. Antonenko, P. R. S. Gomes</i>	
DEVELOPMENT OF AN EXPERIMENTAL SET-UP FOR THE MEASUREMENT OF NEUTRON-INDUCED FISSION AND CAPTURE CROSS SECTIONS OF HIGHLY RADIOACTIVE FISSIONABLE NUCLEI	54
<i>Iulia Companis, Ludovic Mathieu, Mourad Aiche, Peter Schillebeeckx, Jan Heyse, Gerard Barreau, Serge Czajkowski, Quentin Ducasse, Frank Gunsing, Beatriz Jurado, Julie Matarranz, Igor Tsekhanovich</i>	
SPECTROSCOPY OF HIGH LYING RESONANCES IN ^9Be PRODUCED WITH RADIOACTIVE SLI BEAMS	62
<i>A. Lepine-Szily, E. Leistenschneider, D. R. Mendes, P. Descouvemont, R. Lichtenthaler, V. Guimaraes, P. N. De Faria, A. Barioni, K. C. C. Pires, V. Morcelle, R. Pampa Condori, C. Moraes, V. Scarduelli, E. Rossi, V. A. Zagatto, H. Santos, V. A. P. Aguiar, T. Britos</i>	
COUPLED CHANNELS OPTICAL MODEL POTENTIAL FOR RARE EARTH NUCLEI	69
<i>M. Herman, G. P. A. Nobre, A. Palumbo, F. S. Dietrich, D. Brown, S. Hoblit</i>	
ELASTIC AND INELASTIC SCATTERING OF NEUTRONS ON ^{238}U NUCLEUS	77
<i>R. Capote, A. Trkov, M. Sin, M. W. Herman, E. Soukhovitski</i>	
FEW-BODY SEMICLASSICAL APPROACH TO NUCLEON TRANSFER AND EMISSION REACTIONS	93
<i>Renat A. Sultanov, D. Guster</i>	
RECENT ADVANCES IN THE MICROSCOPIC CALCULATIONS OF LEVEL DENSITIES BY THE SHELL MODEL MONTE CARLO METHOD	107
<i>Y. Alhassid, M. Bonett-Matiz, S. Liu, A. Mukherjee, H. Nakada</i>	
COLLECTIVITY IN HEAVY NUCLEI IN THE SHELL MODEL MONTE CARLO APPROACH	117
<i>C. Ozen, Y. Alhassid, H. Nakada</i>	
FORMATION AND DECAY OF A HOT COMPOUND NUCLEUS	123
<i>B. V. Carlson, F. T. Dalmolin, M. Dutra, T. J. Santos, S. R. Souza, R. Donangelo</i>	
REACTIONS WITH LIGHT EXOTIC NUCLEI	139
<i>R. Lichtenthaler, P. N. De Faria, K. C. C. Pires, A. M. Moro, A. Lepine-Szily, V. Guimaraes, D. R. Mendes, A. Arazi, M. Assuncao, A. Barioni, V. Morcelle, M. C. Morais, J. Alcantara Nunez, M. Rodríguez-Gallardo</i>	
TOWARDS THE FUSION OF WEAKLY BOUND PROJECTILES WITH HEAVY TARGETS WITH PROXIMITY BASED POTENTIALS	144
<i>Raj Kumari</i>	
FUSION AT NEAR-BARRIER ENERGIES WITHIN THE QUANTUM DIFFUSION APPROACH	158
<i>V. V. Sargsyan, G. G. Adamian, N. V. Antonenko, W. Scheid, H. Q. Zhang</i>	
SPY: A NEW SCISSION-POINT MODEL BASED ON MICROSCOPIC INPUTS TO PREDICT FISSION FRAGMENT PROPERTIES	173
<i>Stefano Panebianco, Noel Dubray, Stephane Goriely, Stephane Hilaire, Jean-Francois Lemaitre, Jean-Luc Sida</i>	
PHOTON AND PROTON INDUCED FISSION ON HEAVY NUCLEI AT INTERMEDIATE ENERGIES	182
<i>E. Andrade, G. S. Karapetyan, A. Deppman, A. R. Balabekyan, N. A. Demekhina</i>	
PHOTON STRENGTH FUNCTIONS IN GD ISOTOPES STUDIED FROM RADIATIVE CAPTURE OF RESONANCE NEUTRONS	190
<i>J. Kroll, B. Baramsai, G. E. Mitchell, U. Agvaanluvsan, F. Becvar, T. A. Bredeweg, A. Chyzh, A. Couture, D. Dashdorj, R. C. Haight, M. Jandel, A. L. Keksis, M. Krlicka, J. M. O'Donnell, W. Parker, R. S. Rundberg, J. L. Ullmann, S. Valenta, D. J. Vieira</i>	

IWAMOTO-HARADA COALESCENCE/PICKUP MODEL FOR CLUSTER EMISSION: STATE DENSITY APPROACH INCLUDING ANGULAR MOMENTUM VARIABLES	207
<i>Emil Betak</i>	
STATISTICAL THEORY OF BREAKUP REACTIONS	214
<i>Carlos A. Bertulani, Pierre Descouvemont, Mahir S. Hussein</i>	
FALSTAFF: A NOVEL APPARATUS FOR FISSION FRAGMENT CHARACTERIZATION.....	227
<i>Stefano Panebianco, Diane Dore, Fanny Farget, Francois-Rene Lecolley, Gregory Lehaut, Thomas Meterna, Julien Pancin, Thomas Papaevangelou</i>	
SPALLATION OF ¹⁹⁷AU WITH 4.4-GEV DEUTERONS.....	234
<i>G. S. Karapetyan, A. R. Balabekyan, N. A. Demekhina</i>	
COMPARISON BETWEEN CROSS SECTIONS, SADDLE POINT AND SCISSION POINT BARRIERS FOR THE ³²S+²⁴Mg REACTION	242
<i>T. J. Santos, B. V. Carlson</i>	
COMPARISON OF APPROXIMATIONS TO THE TRANSITION RATE IN THE DDHMS PREEQUILIBRIUM MODEL	248
<i>L. Brito, B. V. Carlson</i>	
INITIALIZATION EFFECTS VIA THE NUCLEAR RADIUS ON TRANSVERSE IN-PLANE FLOW AND ITS DISAPPEARANCE	253
<i>Rajni Bansal, Sakshi Gautam</i>	
NEUTRON TO PROTON RATIO DEPENDENCE OF ENERGY OF VANISHING FLOW: ROLE OF SYSTEM SIZE AND COLLISION GEOMETRY.....	261
<i>Sakshi Gautam</i>	
ON THE STABILITY OF FRAGMENTS AND THERMALIZATION ACHIEVED IN NEUTRON-RICH HEAVY-ION COLLISIONS	271
<i>Sukhjit Kaur</i>	
Author Index	