

16th International Symposium on Nuclei in the Cosmos (NIC-XVI)

EPJ Web of Conferences Volume 260 (2022)

Chengdu, China
21 - 25 September 2021

Editors:

**Weiping Liu
Youbao Wang
Bing Guo**

**Xiaodong Tang
Sheng Zeng**

ISBN: 978-1-7138-4456-3

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 4.0 International License. License details:
<http://creativecommons.org/licenses/by/4.0/>.

No changes have been made to the content of these proceedings. There may be changes to pagination and minor adjustments for aesthetics.

Printed with permission by Curran Associates, Inc. (2022)

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-edps@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: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

An Indirect Technique in Nuclear Astrophysics: Alpha-Cluster Transfer Reaction	1
<i>Shen Yang-Ping, Guo Bing, Liu Wei-Ping</i>	
The $^{12}\text{C}+^{12}\text{C}$ Fusion Reaction at Stellar Energies	8
<i>Tang Xiaodong, Ru Longhui</i>	
Proton Partial Widths Evaluation Through the $^{30}\text{Si}(^3\text{He},d)^{31}\text{P}$ Transfer Reaction for Understanding Abundance Anomalies in Globular Clusters	18
<i>Harrouz Djamilia-Sarah, de Séréville Nicolas, Adsley Philip, Hammache Fairouz, Longland Richard, Bastin Beyhan, Faestermann Thomas, Hertzenberger Ralf, La Cognata Marco, Lamia Livio, Meyer Anne, Palmerini Sara, Pizzone Rosario Gianluca, Romano Stefano, Tumino Aurora, Wirth Hans-Friedrich</i>	
Direct Measurement of Carbon Fusion at Astrophysical Energies with Gamma-Particle Coincidences	22
<i>Heine M., Fruet G., Courtin S., Jenkins D.G., Adsley P., Brown A., Canavan R., Catford W.N., Charon E., Curién D., Della Negra S., Duprat J., Hammache F., Lesrel J., Lotay G., Meyer A., Monpriat E., Montanari D., Morris L., Moukaddam M., Nippert J., Podolyák Zs., Regan P.H., Ribaud I., Richer M., Rudigier M., Shearman R., de Séréville N., Stodel C.</i>	
Oxygen Formation in the Light of Gamma-Beams: [Precision Measurements of the $^{12}\text{C}(\alpha, \gamma)$ Reaction with Gamma-Beams and a Time Projection Chamber]	26
<i>Gai Moshe</i>	
Direct Measurements of the $^{12}\text{C}(^{12}\text{C},p)^{23}\text{Na}$ and $^{12}\text{C}(^{12}\text{C},\alpha)^{20}\text{Ne}$ Reactions at Low Energies for Nuclear Astrophysics	30
<i>Morales-Gallegos Lizeth, Aliotta Maria Luisa, Best Andreas, Bruno Carlo G., Buompane Raffaele, Davinson Thomas, De Cesare Mario, Di Leva Antonino, D'Onofrio Antonio, Duarte Jeremias G., Gasques Leandro, Gialanella Lucio, Imbriani Gianluca, Porzio Giuseppe, Rapagnani David, Romoli Mauro, Terrasi Filippo</i>	
Supernova Nucleosynthesis, Radioactive Nuclear Reactions and Neutrino-Mass Hierarchy	35
<i>Yao Xingqun, Kusakabe Motohiko, Kajino Toshitaka, Cherubini Silvio, Hayakawa Seiya, Yamaguchi Hidetoshi</i>	
Nuclear Cosmochronometers for Supernova Neutrino-Process	39
<i>Hayakawa Takehito, Ko Heamin, Cheoun Myung-ki, Kusakabe Motohiko, Kajino Toshitaka, Chiba Satoshi, Nomoto Ken'ichi, Hashimoto Masa-aki, Ono Masaomi, Kawano Toshihiko, Mathews Grant J.</i>	
Analysis of the Impact of the ^{204}Tl Neutron Capture Cross Section on the S-Process Only Isotope ^{204}Pb	43
<i>Casanovas-Hoste Adrià, Domingo-Pardo César, Guerrero Carlos, Tarifeño-Saldivia Ariel, Calviño Francisco, Leredegui-Marco Jorge</i>	
The Impact of Isospin Dependence of Pairing on Ssion Barriers in the Ssion Cycling Regions	48
<i>Afanasyev A. V., Taninah A.</i>	
Beyond-Mean-Field Calculations of Allowed and First-Forbidden β^- Decays of R-Process Waiting-Point Nuclei	52
<i>Robin Caroline, Litvinova Elena, Martínez-Pinedo Gabriel</i>	
Experimental Studies on Astrophysical Reactions at the Low-Energy RI Beam Separator CRIB	56
<i>Yamaguchi H., Hayakawa S., Ma N.R., Shimizu H., Okawa K., Yang L., Kahl D., La Cognata M., Lamia L., Abe K., Beliuskina O., Cha S.M., Chae K.Y., Cherubini S., Figuera P., Ge Z., Gulino M., Hu J., Inoue A., Iwasa N., Kim A., Kim D., Kiss G., Kubono S., La Commara M., Lattuada M., Lee E.J., Moon J.Y., Palmerini S., Parascandolo C., Park S.Y., Phong V. H., Pierroutsakou D., Pizzone R.G., Rapisarda G.G., Romano S., Spitaleri C., Tang X.D., Trippella O., Tumino A., Zhang N.T., Lam Y.H., Heger A., Jacobs A.M., Xu S.W., Ma S.B., Ru L.H., Liu E.Q., Liu T., Hamill C.B., St J. Murphy A., Su J., Fang X., Kwag M.S., Duy N.N., Uyen N.K., Kim D.H., Liang J, Psaltis A., Sferrazza M., Johnston Z., Li Y.Y.</i>	
The Impact of Nuclear Physics Uncertainties on Interpreting Kilonova Light Curves	60
<i>Zhu Yonglin, Barnes Jennifer, Lund K. A., Sprouse T. M., Vassh N., McLaughlin G. C, Mumpower M. R, Surman R.</i>	
Competition Between Allowed and First-Forbidden β^- Decays and the R-Process	64
<i>Podolyák Zsolt</i>	
New Capability for Indirect Neutron Capture Measurements: The DICER Instrument at LANSCE	68
<i>Stamatopoulos A., Koehler P., Matyskin A., Bond E. M., Bredeweg T.A., Couture A., Di Giovine B., Fassbender M.E., Hayes-Sterbenz A. C., Keksis A. L., Parsons K., Rusev G., Ullmann J., Vermeulen C.</i>	
Can We Distinguish Quark Stars from Neutron Stars with Measurements of Global Properties?	76
<i>Li Ang</i>	

First Measurement of 25Al+p Resonant Scattering Relevant to the Astrophysical Reaction	
22Mg(α,p)25Al	82
<i>Hu J., Yamaguchi H., Lam Y.H., Heger A., Kahl D., Jacobs A.M., Johnston Z., Xu S.W., Zhang N.T., Ma S.B., Ru L.H., Liu E.Q., Liu T., Hayakawa S., Yang L., Shimizu H., Hamill C.B., Murphy A. StJ., Su J., Fang X., Chae K.Y., Kwag M.S., Cha S.M., Duy N.N., Uyen N.K., Kim D.H., Pizzone R.G., La Cognata M., Cherubini S., Romano S., Tumino A., Liang J., Psaltis A., Sferrazza M., Kim D., Li Y.Y., Kubono S.</i>	
Effects of Nuclear Equation of State on Type-I X-Ray Bursts and Implication for Clocked Burster GS	
1826–24	87
<i>Dohi Akira, Nishimura Nobuya, Hashimoto Masa-aki, Matsuo Yasuhide, Noda Tsuneo, Nagataki Shigehiro</i>	
Type Ia SN Progenitors: Pre-Explosion Phase in Nearly Chandrasekhar Mass WDs	92
<i>Domínguez Inma, Piersanti Luciano, Bravo Eduardo, Straniero Oscar, Cristallo Sergio</i>	
Slow White Dwarf Mergers as a New Galactic Source of Trans-Iron Elements	97
<i>Battino Umberto, Lederer-Woods Claudia, Travaglio Claudia, Röpke Friedrich Konrad, Gibson Brad</i>	
Axion-Like Particles from Nearby Type Ia Supernovae	101
<i>Mori Kanji</i>	
Screening Effects on Electron-Capture Rates and Type Ia Supernova Nucleosynthesis	105
<i>Suzuki Toshio, Mori Kanji, Honma Michio, Famiano Michael A., Kajino Toshitaka, Kusakabe Motohiko, Balantekin A. Baha</i>	
The Character of Three-Dimensional Core-Collapse Simulation Results	109
<i>Burrows Adam, Coleman Matthew</i>	
Stellar Elemental Abundances Constraining Nucleosynthesis and Chemical Evolution of the Universe	118
<i>Aoki Wako</i>	
Exploring the Uncertainties of (α, Xn) Reactions for the Weak R-Process	123
<i>Psaltis Athanasios, Arcones Almudena, Avila Melina L., Jacobi Maximilian, Meisel Zach, Mohr Peter, Montes Fernando, Ong Wei Jia</i>	
Impacts of Strongly Magnetized Degenerate Plasma on the Electron-Capture Rates	128
<i>Luo Yudong, Kusakabe Motohiko, Kajino Toshitaka</i>	
Commissioning of Underground Nuclear Astrophysics Experiment JUNA in China	132
<i>Liu Weiping, Li Zhihong, He Jianjun, Tang Xiaodong, Lian Gang, Su Jun, Shen Yangping, An Zhu, Chao Fuqiang, Chang Jianjun, Chen Lihua, Chen Han, Chen Xiongjun, Chen Yunhua, Chen Zhijun, Cheng Jianping, Cui Baoqun, Fang Xiao, Fu Changbo, Gan Lin, Guo Bing, Han Zhiyu, Guo Xuyuan, He Guozhu, He Jinrong, Heger Alexander, Hou Suqing, Huang Hanxiong, Huang Ning, Jia Baolu, Jiang Liyang, Kubono Shigeru, Li Jianmin, Li Mingchuan, Li Kuoang, Li Ertao, Li Tao, Li Yunju, Lugaro Maria, Luo Xiaobing, Ma Hongyi, Ma Shaobo, Mei Dongming, Nan Wei, Nan Weike, Qi Ningchun, Qian Yongzhong, Qin Jiuchang, Ren Jie, Shang Changsong, Sun Liangting, Sun Wenliang, Tan Wanpeng, Tanihata Isao, Wang Shuo, Wang Peng, Wang Yao, Wang Yubao, Wu Qi, Xu Shiwei, Yang Yao, Yu Xiangqing, Yue Qian, Zeng Sheng, Zhang Long, Zhang Hao, Zhang Huanyu, Zhang Liyong, Zhang Ningtao, Zhang Peng, Zhang Qiwei, Zhang Tao, Zhang Xiaopeng, Zhang Xuechen, Zhao Wei, Zhou Jifang, Zhou Yong</i>	
Measurement of the Low Energy 25Mg(p,γ)26Al Resonances	138
<i>Su Jun, Li Zhihong, Zhang Hao, Li Yunju, Li Ertao, Chen Chen, Shen Yangping, He Jianjun, Zhang Liyong, Li Xinyue, Lian Gang, Guo Bing, Wang Luohuan, Sheng Yaode, Chen Yinji, Zhang Long, Cao Fuqiang, Liu Weiping</i>	
Final Results on the 13C(α,n)16O Cross Section at Low Energies at LUNA	144
<i>Ciani Giovanni Francesc, Csedreki Laszlo, Rapagnani David, Best Andreas, Formicola Alba, LUNA collaboration</i>	
Direct Measurement of the 19F(p, $\alpha\gamma$)16O Reaction in JUNA	149
<i>Zhang L.Y., Su J., He J.J., Wiescher M., deBoer R.J., Kahl D., Chen Y.J., Li X.Y., Wang J.G., Zhang L., Cao F.Q., Zhang H., Zhang Z.C., Jiao T.Y., Sheng Y.D., Wang L.H., Song L.Y., Jiang X.Z., Li Z.M., Li E.T., Wang S., Lian G., Li Z.H., Tang X.D., Zhao H.W., Sun L.T., Wu Q., Li J.Q., Cui B.Q., Chen L.H., Ma R.G., Guo B., Xu S.W., Li J.Y., Qi N.C., Sun W.L., Guo X.Y., Zhang P., Chen Y.H., Zhou Y., Zhou J.F., He J.R., Shang C.S., Li M.C., Zhou X.H., Zhang Y.H., Zhang F.S., Hu Z.G., Xu H.S., Cheng J.P., Liu W.P.</i>	
Probing the Early Universe from Deep Underground	153
<i>Cavanna Francesca, for the LUNA collaboration</i>	
Probing Massive Star Nucleosynthesis with Data on Metal-Poor Stars and the Solar System	159
<i>Qian Yong-Zhong</i>	
R-Process Contributions to Low-Metallicity Stars	165
<i>Thielemann Friedrich-K., Farouqi Khalil, Rosswog Stephan, Kratz Karl-Ludwig</i>	
Light Element Abundances Constrain Primordial Black Holes in the Critical Collapse Model	176
<i>Chen Chao, Luo Yudong, Kusakabe Motohiko, Kajino Toshitaka</i>	
Gamma-Ray Observations of Cosmic Nuclei	180
<i>Diehl Roland</i>	
Compton Imaging and Machine-Learning Techniques for an Enhanced Sensitivity in Key Stellar (n,γ)	
Measurements	192
<i>Lerendegui-Marco J., Babiano-Suárez V., Balibrea-Correa J., Babiano-Suárez V., Caballero L., Calvo D., Domingo-Pardo C., Ladarescu I., Real D., Calviño F., Casanovas A., Tarifeño-Saldivia A., Alcayne V., Guerrero C., Millán-Callado M.A., Rodríguez-González T., Barbagallo M., Chiera N.M., Dressler R., Heinitz S., Maugeri E.A., Schumann D., Köster U.</i>	

Cross-Section Measurements Relevant for the Astrophysical P Process at the University of Cologne	200
<i>Heim Felix, Müller Martin, Scholz Philipp, Wilden Svenja, Zilges Andreas</i>	
$3\text{He}(\alpha,\gamma)7\text{Be}$ Cross Section Measurement Around 7Be Known Energy Levels	204
<i>Tóth Akos, Szücs Tamás</i>	
The Challenging Direct Measurement of the 65 keV Resonance Strength of the $17\text{O}(\text{p},\gamma)18\text{F}$ Reaction at LUNA	207
<i>Ciani Giovanni Francesco, Piatti Denise, Gesuè Riccardo Maria, for the LUNA collaboration</i>	
Binary Neutron Star Mergers of Quark Matter Based Nuclear Equations of State	211
<i>Kedia Atul, Mathews Grant, Kim Hee Il, Suh In-Saeng</i>	
Investigation of the $7\text{Li}(\text{p},\text{n})$ Neutron Elds at High Energies	215
<i>Brückner Benjamin, Erbacher Philipp, Göbel Kathrin, Heftrich Tanja, Khasawneh Kafa, Kurtulgil Deniz, Langer Christoph, Nolte Ralf, Reich Markus, Reifarh René, Thomas Benedikt, Weigand Mario, Wiescher Michael, Volkmandt Meiko</i>	
Measurement of the $7\text{Be}(\text{p}, \gamma)8\text{B}$ Reaction Cross Section with the Recoil Mass Separator ERNA	218
<i>Buompane Raffaele, Di Leva Antonino, Gialanella Lucio, D'Onofrio Antonio, De Cesare Mario, Jeremias G. Duarte, Fülöp Zsolt, Leandro R. Gasques, Gyürky György, Morales-Gallegos Lizeth, Marzaioli Fabio, Palumbo Giancarlo, Porzio Giuseppe, Rapagnani David, Roca Vincenzo, Rogalla Detlef, Romoli Mauro, Santonastaso Claudio, Schürmann Daniel</i>	
Study of the $20\text{Ne}(\text{p},\gamma)21\text{Na}$ Reaction at LUNA	224
<i>Caciolli Antonio, Zavatarelli Sandra, for the LUNA collaboration</i>	
Measurement and Analysis Techniques for a Study of $12\text{C}(\text{p},\gamma)$ and $13\text{C}(\text{p},\gamma)$ Deep Underground	227
<i>Skowronski Jakob, for the LUNA collaboration</i>	
Fluorine Nucleosynthesis and S-Processing in AGB Stars Driven by Magnetic-Buoyancy Mixing	231
<i>Vescovi Diego, Cristallo Sergio, Palmerini Sara, Abia Carlos, Busso Maurizio</i>	
Measurement of $12\text{C}(\text{n},\text{n}')\text{Reaction Cross Section to Determine Triple-Alpha Reaction Rate in High-Density Environments$	234
<i>Furuno Tatsuya, Doi Takanobu, Himi Kanako, Kawabata Takahiro, Adachi Satoshi, Akimune Hidetoshi, Enyo Shiyo, Fujikawa Yuki, Hijikata Yuto, Inaba Kento, Itoh Masatoshi, Kubono Shigeru, Matsuda Yohei, Murata Isao, Murata Motoki, Okamoto Shintaro, Sakanashi Kosuke, Tamaki Shingo</i>	
Observational Properties of Peculiar Core-Collapse Super-Novae Producing R-Process Elements	239
<i>Hasegawa Tatsuki, Tanaka Masaomi, Nishimura Nobuya, Kawaguchi Kyohei, Saito Sei, Domoto Nanae</i>	
Activation Measurements of Neutron Capture Cross Sections at Various Temperatures	243
<i>Heftrich Tanja, Weigand Mario, Al-Khasawleh Kafa, Brückner Benjamin, Dellmann Sophia, Dogan Ozan Can, El Mard Asmaa, Erbacher Philipp, Habermehl Fabian, Heybeck Benedict, Gail Madeleine Margaux, Göbel Kathrin, Kisselbach Timo, Kurtulgil Deniz, Reich Markus, Reifarh René, Sheriff Silas, Volkmandt Meiko</i>	
Semi-Empirical Fission Model for R-Process Based on the Recent Experiments and Three-Dimensional Langevin Approach	246
<i>Ishizuka Chikako, Tsubakihara Kohsuke, Chiba Satoshi, Sekiguchi Yuichiro, Wanajo Shinya</i>	
Carbon Burning Rates on the Compound Nucleus Formation	249
<i>Katsuma Masahiko</i>	
Measurement of the $18\text{O}(\alpha, \gamma)22\text{Ne}$ Resonances at JUNA	252
<i>Wang Luohuan, Su Jun, Shen Yangping, He Jianjun, Zhang Liyong, Li Xinyue, Lian Gang, Guo Bing, Sheng Yaode, Chen Yinji, Zhang Hao, Li Ziming, Song Luyang, Jiang Xinzhi, Nan Wei, Nan Weike, Zhang Long, Cao Fuqiang, Liu Weiping</i>	
Enhancement of Lithium in Red Clump Stars by Neutrino Magnetic Moments	256
<i>Mori Kanji, Kusakabe Motohiko, Balantekin A. Baha, Kajino Toshitaka, Famiano Michael A.</i>	
First Direct Limit on the 395 keV Resonance of the $22\text{Ne}(\alpha, \gamma)26\text{Mg}$ Reaction	259
<i>Masha Eliana, for the LUNA collaboration</i>	
New Study of the Neutron Rich 136Te Isotope Through Decay Spectroscopy	265
<i>Si Min, Lozeva Radomira, for the ILL3-81-635 collaboration</i>	
The Structure of 0^+ States in 16O Using Real-Time Evolution Method	268
<i>Motoki Hideaki, Kimura Masaaki</i>	
Three-Dimensional Supernova Simulation of SN 1987A Progenitor with Implications for Multi-Messenger Signals	271
<i>Nakamura Ko</i>	
NG-TRAP: Measuring Neutron Capture Cross-Sections of Short-Lived Fission Fragments	274
<i>Dickel T., Mardor I., Wilsenach H., Ashkenazy J., Plaß W. R., Scheidenberger C., Yavor M. I.</i>	
The Dyadic Radionuclide System $60\text{Fe} / 53\text{Mn}$ to Distinguish Interstellar from Interplanetary 60Fe	280
<i>Koll Dominik, Faestermann Thomas, Korschinek Gunther, Leya Ingo, Merchel Silke, Wallner Anton</i>	
Regulated NiCu Cycles with the New $57\text{Cu}(\text{p},\gamma)58\text{Zn}$ Reaction Rate and the Influence on Type-I X-Ray Bursts: GS 1826–24 Clocked Burster	284
<i>Lam Yi Hua, Lu Ning, Heger Alexander, Jacobs Adam Michael, Smirnova Nadezda A., Nieto Teresa Kurtukian, Johnston Zac, Kubono Shigeru</i>	

Cooling of Neutron Stars with Quark-Hadron Continuity	287
<i>Noda Tsuneo, Yasutake Nobutoshi, Hashimoto Masa-aki, Maruyama Toshiki, Tatsumi Toshitaka</i>	
Effect of the Nuclear Equation of State and Relativistic Turbulence on Core-Collapse Supernovae	293
<i>Boccioli Luca, Mathews Grant, O'Connor Evan</i>	
First 80Se(n,γ) Cross Section Measurement with High Resolution in the Full Stellar Energy Range 1 eV - 100 keV and Its Astrophysical Implications for the S-Process	303
<i>Babiano-Suarez V., Balibrea-Correa J., Caballero-Ontanaya L., Domingo-Pardo C., Ladarescu I., Lerendegui-Marco J., Tain J. L., Calvino F., Casanovas A., Tarifeno-Saldivia A., Guerrero C., Aberle O., Alcayne V., Amaducci S., Andrzejewski J., Audouin L., Bacak M., Barbagallo M., Bennett S., Berthoumieux E., Billowes J., Bosnar D., Brown A., Busso M., Caamano M., Calviani M., Cano-Ott D., Cerutti F., Chiaveri E., Colonna N., Cortes G., CortesGiraldo M. A., Cosentino L., Cristallo S., Damone L. A., Davies P. J., Diakaki M., Dietz M., Dressler R., Ducasse Q., Dupont E., Duran I., Eleme Z., Fernandez-Dominguez B., Ferrari A., Finocchiaro P., Furman V., Gobel K., Garg R., Gawlik-Rami,ga A., Gilardoni S., Goncalves I. F., Gonzalez-Romero E., Gunging F., Harada H., Heinitz S., Heyse J., Jenkins D. G., Junghans A., Kappeler F., Kadi Y., Kimura A., Knapova I., Kokkoris M., Kopatch Y., Krtika M., Kurtulgil D., Lederer-Woods C., Leeb H., Lonsdale S. J., Macina D., Manna A., Martinez T., Masi A., Massimi C., Mastinu P., Mastro marco M., Maugeri E. A., Mazzone A., Mendoza E., Mengoni A., Michalopoulou V., Milazzo P. M., Mingrone F., Moreno-Soto J., Musumarra A., Negret A., Nolte R., Ogallar F., Oprea A., Patronis N., Pavlik A., Perkowski J., Persanti L., Petrone C., Pirovano E., Porras I., Praena J., Quesada J. M., Ramos-Doval D., Rauscher T., Reifarth R., Rochman D., Romanets Y., Rubbia C., Sabate-Gilarte M., Saxena A., Schillebeeckx P., Schumann D., Sekhar A., Smith A. G., Sosnin N. V., Sprung P., Stamatoopoulos A., Tagliente G., Tassan-Got L., Thomas Th., Torres-Sanchez P., Tsinganis A., Ulrich J., Urluss S., Valenta S., Vannini G., Variale V., Vaz P., Ventura A., Vescovi D., Vlachoudis V., Vlastou R., Wallner A., Woods P. J., Wright T., .ugec P., and the n_TOF Collaboration</i>	
Underground Measurement at LUNA Found No Evidence for a Low-Energy Resonance in the 6Li(p,γ)7Be Reaction	311
<i>Piatti Denise, for the LUNA Collaboration</i>	
Sensitivity Study of Nuclear Reactions Influencing Photospheric Radius Expansion X-Ray Bursts	316
<i>Lam Yi Hua, Heger Alexander, Johnston Zac, Goodwin Adelle Jane</i>	
Neutrino and Antineutrino pair-Emission in Strong Magnetic Field in Relativistic Quantum Approach	319
<i>Maruyama Tomoyuki, Balantekin A. Baha, Cheoun Myung-Ki, Kajino Toshitaka, Mathews Grand J.</i>	
Radiative Proton-capture Reactions with 112,114Cd at Astrophysically Important Energies	322
<i>Vasileiou Polytimos, Mertzimekis Theo J., Chalil Achment, Fakiola Christina, Karakasis Ioannis, Kotsovolou Anastasia, Pelonis Stefanos, Zyriliou Aikaterini</i>	
Shades - 22Ne(α, n)25Mg Reaction Rate in the Gamow Window	326
<i>Rapagnani David, Ananna Chemseddine, Di Leva Antonino, Imbriani Gianluca, Junker Matthias, Pignatari Marco, Best Andreas</i>	
Description of Weak-Interaction Rates Within the Relativistic Energy Density Functional Theory	331
<i>Ravli. Ante, Yuksel Esra, Niu Yifei, Paar Nils, Colo Gianluca, Khan Elias</i>	
Red Dwarfs as Sources of Cosmic Rays	339
<i>Sinitysyna Vera Yu., Sinitysyna Vera G., Stozhkov Yurii I.</i>	
Measuring the 150(α,γ)19Ne Reaction in Type I X-Ray Bursts Using the GADGET II TPC: Software	342
<i>Mahajan Ruchi, Adams A., Allmond J., Alvarez Pol H., Argo E., Ayyad Y., Bardayan D., Bazin D., Budner T., Chen A., Chipps K., Davids B., Dopfer J., Friedman M., Fynbo H., Grzywacz R., Jose J., Liang J., Pain S., Perez-Loureiro D., Pollacco E., Psaltis A., Ravishankar S., Rogers A., Schaedig L., Sun L. J., Surbrook J., Wheeler T., Weghorn L., Wrede C.</i>	
Reactor Activations to Constrain Astrophysically Relevant Cross Sections	345
<i>Dellmann Sophia, Reifarth René, Weigand Mario, Eberhardt Klaus, Garg Ruchi, Geppert Christopher, Heftrich Tanja, Kurtulgil Deniz, Lederer-Woods Claudia</i>	
A Moderately-Sized Nuclear Network to Assist multi-D Hydrodynamic Simulations of Supernova Explosions	348
<i>Sanz Axel, Cabezón Rubén, García-Senz Domingo</i>	
Impact of the Decay Width in Breit-Wigner Formula on Maxwellian-Averaged Cross Section for Neutron Capture on 16O	351
<i>Xu Si-Zhe, Zhang Shi-Sheng</i>	
Three-Dimensional Hydrodynamics Simulations of Shell Burning in Si/O-Rich Layer of Pre-Collapse Massive Stars	358
<i>Yoshida Takashi, Takiwaki Tomoya, Kotake Kei, Takahashi Koh, Nakamura Ko, Umeda Hideyuki, Aguilera-Dena David R., Langer Norbert</i>	
Proton Emission Study as a Guide to Astrophysical Rp Process	361
<i>Siwach Pooja, Arumugam P., Modi S., Ferreira L. S., Maglione E.</i>	
Sensitivity Study of Type-I X-Ray Bursts to Nuclear Reaction Rates	365
<i>Sultana Irin, Estradé Alfredo, Borowiak Jessica, Elliott Jacob, Meyer Bradley S., Schatz Hendrik</i>	
Self-Consistent Energy Density Functional Approaches to the Crust of Neutron Stars	370
<i>Nakatsukasa Takashi</i>	

Massive First Star Binaries as New Tools for Galactic Archaeology	373
<i>Suda Takuma, Saitoh Takayuki R., Moritani Yuki, Matsuno Tadafumi, Shigeyama Toshikazu</i>	
The SHADES Neutron Detection Array	376
<i>Ananna Chemseddine, Rapagnani David, Best Andreas, Di Leva Antonino, Imbriani Gianluca</i>	
SECAR: A Recoil Separator for Nuclear Astrophysics	381
<i>Tsintari Pelagia, Garg Ruchi, Berg Georg, Blackmon Jeff, Chipps Kelly, Couder Manoel, Deibel Catherine, Dimitrakopoulos Nikolaos, Greife Uwe, Hood Ashley, Jain Rahul, Marshall Caleb, Meisel Zach, Miskovich Sara, Montes Fernando, Perdikakis Georgios, Ruland Thomas, Schatz Hendrik, Setoodehnia Kiana, Smith Michael, Wagner Louis</i>	
Structure of Two-And Three-Alpha Systems in Cold Neutron Matter	387
<i>Moriya Hajime, Tajima Hiroyuki, Horiuchi Wataru, Iida Kei, Nakano Eiji</i>	
Measuring the $^{150}(\alpha, \gamma)^{19}\text{Ne}$ Reaction in Type I X-Ray Bursts Using the GADGET II TPC:	
Hardware	390
<i>Wheeler Tyler, Adams A., Allmond J., Alvarez Pol H., Argo E., Ayyad Y., Bardayan D., Bazin D., Budner T., Chen A., Chipps K., Davids B., Dopfer J., Friedman M., Fynbo H., Grzywacz R., Jose J., Liang J., Mahajan R., Pain S., Pérez-Loureiro D., Pollacco E., Psaltis A., Ravishankar S., Rogers A., Schaedig L., Sun L. J., Surbrook J., Weghorn L., Wrede C.</i>	
Gamma-Ray Emission from Supermassive Black Hole Binary OJ 287	393
<i>Sinitsyna Vera Yu., Sinitsyna Vera G.</i>	
Novel Experimental Techniques for Neutron Induced Charge Particle Reaction Studies in Nuclear Astrophysics	397
<i>Yadav Chandrabhan, Friedman Moshe</i>	
β-Decay Half-Lives of Neutron-Rich $N=82,81$ Isotones by Shell-Model Calculations	400
<i>Shimizu Noritaka, Utsuno Yutaka, Togashi Tomoaki</i>	
Cosmic Ray Production in SNRs of Pulsar Wind Nebulae Type at Different Ages	404
<i>Sinitsyna Vera G., Sinitsyna Vera Y.</i>	
Unresolved Nature Source TeV J2032+4130	408
<i>Sinitsyna V. G., Balygin K. A., Borisov S. S., Klimov A. I., Mirzafatikhov R. M., Moseiko N. I., Ostashev I. E., Sinitsyna V. Y.</i>	
Symposium Summary	412
<i>Liu Weiping</i>	
Author Index	