Contents

Preface . . . 3

NTSE-2016 Scientific Advisory Committee . . . 4

NTSE-2016 Organizing Committee . . . 5

Program of International Conference on Nuclear Theory in the Supercomputing Era — 2016 (NTSE-2016) . . . 6

Invited talks:

James P. Vary, Robert Basili, Weijie Du, Matthew Lockner, Pieter Maris, Dossay Oryspayev, Soham Pal, Shiplu Sarker, Hasan Metin Aktulga, Esmond Ng, Meiyue Shao and Chao Yang, *Ab initio No Core Shell Model with Leadership-class supercomputers* . . . 15

F. Raimondi and C. Barbieri, *Irreducible 3-body force contributions to the self-energy* . . . 36

Zhonghao Sun, Qiang Wu and Furong Xu, *Green's function calculations of light nuclei* . . . 52

Kimiko Sekiguchi, *Experiments of few-nucleon scattering and three-nucleon forces* . . . 60

V. D. Efros, *Approach to computation of few/many-body multichannel reactions* . . . 66

L. Hlophe and Ch. Elster, *Energy dependent separable optical potentials for* (d, p) *reactions* . . . 76

R. Skibiński, J. Golak, A. M. Shirokov, K. Topolnicki, Y. Volkotrub and H. Witała, *Three-nucleon reactions with recently derived nuclear potentials* . . . 90

W. Du, P. Yin, G. Chen, X. Zhao and J. P. Vary, *Deuteron Coulomb excitation in peripheral collisions with a heavy ion* . . . 102

Kai Wen and Takashi Nakatsukasa, *Self-consistent collective motion path for nuclear fusion/fission reactions* . . . 115

N. A. Khokhlov, *Deuteron wave function and neutron form factors from elastic electron-deuteron scattering* . . . 124

Joel E. Lynn, *Quantum Monte Carlo calculations with chiral effective field theory interactions: developments and a recent application* . . . 140

Youngman Kim, *QCD Fossils in Nuclei?* . . . 154

Jie Zhao, Bing-Nan Lu, En-Guang Zhao and Shan-Gui Zhou, *Nuclear tetrahedral shapes from multidimensionally-constrained covariant density functional theories* . . . 159

Kai Wang and Junchen Pei, *Pygmy dipole modes in shape-coexisting* ^{40}Mg . . . 174

Noritaka Shimizu, *Large-scale shell-model studies of exotic nuclei and nuclear level densities* . . . 179

A. I. Mazur, A. M. Shirokov, I. A. Mazur, E. A. Mazur, Y. Kim, I. J. Shin, L. D. Blokhintsev and J. P. Vary, *Resonant states in ^{5}He and ^{5}Li and nucleon-α scattering* . . . 185

O. A. Rubtsova, V. N. Pomerantsev and V. I. Kukulin, *Solving few-body scattering problems in a discrete representation by using GPU* . . . 205

L. Coraggio, A. Gargano and N. Itaco, *Large-scale shell-model challenges within the RIB era* . . . 226

A. S. Zaytsev, M. S. Aleshin, L. U. Ancarani and S. A. Zaytsev, *Electron correlations in the framework of the quasi Sturmian approach* . . . 236

John C. Hill for the PHENIX Collaboration, *Highlights from the 17-year heavy ion program at the PHENIX experiment at RHIC* . . . 246

A. S. Solovyev, S. Yu. Igashov and Yu. M. Tchuvil'sky, *Algebraic versions of resonating group and orthogonality condition models as fundamentals of theoretical approaches to the description of radiative capture* . . . 267

I. A. Mazur, A. M. Shirokov, A. I. Mazur, I. J. Shin, Y. Kim and J. P. Vary, *Ab initio description of the tetraneutron with realistic NN interactions within the NCSM-SS-HORSE approach* . . . 280

Alphabetic list of the NTSE-2016 speakers . . . 293