

# 15th International Conference on Nuclear Reaction Mechanisms

Varenna, June 11-15, 2018

## Monday morning

8.50-11 [Chairperson: H. Lenske]  
(10')

*Nuclear structure*

OPENING

(25'+5')

<b>A. Brown</b>	Microscopic calculations of nuclear level densities with the Lanczos method
<b>R. Broglia</b>	Inverse kinematics and reaction mechanism at the drip line: probing virtual states and the nuclear vacuum
<b>Y. Alhassid</b>	The deformation dependence of level densities in the configuration-interaction shell model
<b>G. Potel Aguilar</b>	Probing nuclear structure with neutron transfer reactions

## COFFEE BREAK

11.30-12.30 [Chairperson: J.M. Quesada Molina]  
(15'+5')

*Nuclear structure/reactions*

<b>G. Royer</b>	Geometric shapes describing nuclear reaction mechanisms such as fusion, alpha emission and capture, binary and ternary fission, planar fragmentation and n-alpha nuclei
<b>B. Tatischeff</b>	Oscillation symmetry applied to: 1) hadronic and nuclei masses and widths, and used to suggest unknown spins, 2) astrophysics
<b>J. Lopez</b>	Symmetry energy in the liquid-gas mixture

## Monday afternoon

**15-17** [Chairperson: **P. Talou**]  
(25'+5')

### *Fission*

**N. Schunck**

Microscopic Description of Nuclear Fission: Progress and Perspectives

**W. Younes**

A basis for scission dynamics

(15'+5')

**S. Okumura**

Hauser-Feshbach Statistical Decay and Beta Decay Calculation for Primary Fission Fragments

**C.-Y. Wu**

Dependence of the prompt fission gamma-ray spectrum on the entrance channel of compound nucleus: spontaneous vs neutron-induced fission

**P. Jaffke**

Correlations between the fission fragment yields and the prompt fission gamma-ray spectrum

## TEA BREAK

**17.30-19** [Chairperson: **A. Andreyev**]  
(25'+5')

### *Fission*

**Y. Iwata**

Systematic TDDFT data for nuclear fission analysis

(15'+5')

**I. Stetcu**

Real-time description of fission

**M. Verriere**

First comparison between microscopic and macroscopic-microscopic potential energy surfaces for the description of fission

**M. D. Usang**

Effects of the temperature on nuclear deformation energy and the predictions of fission observables calculated within the Langevin approach

## Tuesday morning

**9-11** [Chairperson: **N. Schunck**]  
(25'+5')

### *Fission*

**A. Tonchev**

An Unexpected Energy Evolution of the Fission-Product Yields from Neutron-Induced Fission of  $^{235}\text{U}$ ,  $^{238}\text{U}$ , and  $^{239}\text{Pu}$

**P. Talou**

Correlated Prompt Fission Data in Transport Simulations

(15'+5')

**M. Rapala**

Gamma-ray cascade study in abundant fission fragments with the EXILL experiment and FIFRELIN simulation

**L. Liu**

Phenomenological study of fission yield for  $^{233}\text{U}$  induced by neutrons below 20 MeV

**I. Tsekhanovich**

Fission properties of nuclei in the  $^{180}\text{Hg}$  region

## COFFEE BREAK

**11.30-12.40** [Chairperson: **Y. Watanabe**]  
(25'+5')

### *Fission*

**A. Andreyev**

Fission studies using multi-nucleon transfer reactions at the JAEA tandem

(15'+5')

**Y. Chen**

Isoscaling study of binary fission yields

**T. Yoshida**

Aggregate Decay Behavior of Fission Products in Nuclear Reactors - Decay Heat, Reactor Antineutrino and the Pandemonium Problem -

## Tuesday afternoon

14.45-16.45 [Chairperson: R. Capote]  
(25'+5')

### *Nuclear reactions*

<b>H. Lenske</b>	Probing Nuclear Beta-Decay by Heavy Ion Charge Exchange Reactions
<b>M. Dupuis</b>	Advances in microscopic modeling of (n,xn gamma) reactions for actinides

(15'+5')

<b>M. Colonna</b>	Heavy Ion charge exchange reactions and the link with beta decay processes
<b>T. Borello-Lewin</b>	Coulomb-nuclear interference and isospin characterization of the first 2+ and 3- transitions by inelastic scattering of alpha particles on 90,92Zr
<b>A. Nasri</b>	Towards a non-local microscopic description of scattering observables of nucleons on deformed nuclei

## TEA BREAK

17.15-18.45 [Chairperson: L. Pinsky]  
(25'+5')

### *Facilities*

<b>S. Foertsch</b>	Novel Results from ALICE
<b>K. Tanaka</b>	Major accelerator facilities for nuclear physics in Asia Pacific
<b>M. Pravikoff</b>	Neutrinos, wine and fraudulent business practices

## Tuesday evening

20.15

**Ettore Gadioli wine party**

*Villa Cipressi*

## Wednesday morning

**9-11** [Chairperson: **L. Canton**]  
(25'+5')

*Medical radioisotopes*

<b>S. Brandenburg</b>	Future production of medical radioisotopes
<b>S.M. Qaim</b>	Nuclear data for production of novel medical radionuclides
<b>Y. Nagai</b>	Diagnostic $^{99}\text{Mo}/^{99\text{m}}\text{Tc}$ and Therapeutic $^{67}\text{Cu}$ Radioisotopes Produced by Neutrons from C,Be(d,n)
<b>G. Pupillo</b>	Cyclotron-based production of the theranostic radionuclides $^{67}\text{Cu}$ and $^{47}\text{Sc}$

## COFFEE BREAK

**11.30-13.10** [Chairperson: **A. Plompen**]  
(15'+5')

*Medical radioisotopes*

<b>A. Fontana</b>	Challenges in the modeling of nuclear reactions for theranostic applications
<b>R. Capote</b>	Nuclear data for the production of medical radionuclides
<b>A. Guertin</b>	Production of innovative radionuclides for therapy or diagnostic: nuclear data measurements and comparisons with the TALYS code
<b>M. Sitarz</b>	Production of medically interesting $^{97}\text{Ru}$ via $\text{natMo}(\alpha,x)$ above 40 MeV at ARRANAX
<b>all</b>	General discussion

## Wednesday evening

**Session in honor of Anton Antonov and Pavel Oblozinsky**

20.30 RECEPTION

**21-23** [Chairperson: **C.H. Dasso**]  
(30')

**E. Tomasi**  
**A. Antonov**  
**S.M. Qaim /**  
**M. Herman**  
**P. Oblozinsky**

## Thursday morning

**9-11** [Chairperson: **L. Sihver**]  
(25'+5')

### *Hadrontherapy*

**J.I. Porras Sanchez** Perspectives in Neutron Capture Therapy of Cancer

**M.P. Carante** A radiobiological database produced by the BIANCA model to predict the biological effectiveness of hadrontherapy beams

(15'+5')

**A. Embriaco** MONET code: evaluation of the dose in Hadrontherapy

**G. Aricò** Development of the nuclear reaction and fragmentation models for heavy ion collisions in the therapeutic energy range

**M. Marafini** The FOOT (FragmentatiOn Of Target) experiment

## COFFEE BREAK

**11.30-12.50** [Chairperson: **T. Yoshida**]  
(15'+5')

### *Radioactive waste, neutrino*

**H. Wang** Nuclear reaction study for high-level radioactive waste: Cross section measurements for proton- and deuteron-induced spallation reactions of long-lived fission products

**R. Kimura** The demand for TRU nuclide cross-sections from the view point of TRU production and radiotoxicity

**M. Ivanov** Charged-current quasielastic (anti)neutrino cross sections on  $^{12}\text{C}$  with realistic spectral functions including meson-exchange contributions

**D. Torresi** Double charge exchange reactions for neutrino physics: recent results and future perspectives

## Thursday afternoon

**15-17** [Chairperson: **F. Cerutti**]  
(25'+5')

### *Facilities*

<b>G. Tagliente</b>	Recent results of n_TOF facility at CERN
<b>F. Cavanna</b>	Nuclear astrophysics at Gran Sasso Laboratory: the LUNA400 experiment

(15'+5')

<b>M. Barbagallo</b>	(n,cp) reactions study at the n_TOF facility at CERN: results for the Cosmological Lithium problem
<b>D. Piatti</b>	The Study of the $^{22}\text{Ne}(\alpha,\gamma)^{26}\text{Mg}$ at LUNA
<b>A. Long</b>	Probing neutron-induced charged-particle emission reactions using LENZ at LANCSE

## TEA BREAK

**17.30-19** [Chairperson: **J. Escher**]  
(25'+5')

### *Potential, strangeness, pion*

<b>C. Giusti</b>	Microscopic Optical Potential Derived from NN Chiral Potentials
<b>J. Hirtz</b>	Production of strange particles and hypernuclei in spallation reactions from the coupling of intranuclear cascade and de-excitation models
<b>C. Hartnack</b>	Isospin of pions - what do they tell us about the neutron skin of nuclei?

## Friday morning

**9-11** [Chairperson: **A. Ferrari**]  
(25'+5')

### *Deuteron induced reactions*

<b>M. Avrigeanu</b>	Comparative analysis of empirical parametrizations and microscopical studies of deuteron-induced reactions
<b>F. Salvat Pujol</b>	Towards inclusion of low-energy deuteron interactions with target nuclei in FLUKA

(15'+5')

<b>E. Nigron</b>	Production cross section of $^{197}\text{mHg}$ induced by deuterons on natural gold target
<b>Y. Watanabe</b>	Isotopic production cross sections of residual nuclei in proton- and deuteron-induced reactions on $^{91,92}\text{Y}$ , $^{92,93}\text{Zr}$ , and $^{93,94}\text{Nb}$ around 100 MeV/nucleon
<b>X. Sun</b>	Cross-section measurements in the reactions of $^{136}\text{Xe}$ on proton, deuteron and carbon at 168 A MeV

## COFFEE BREAK

**11.30-13** [Chairperson: **M. Dupuis**]  
(25'+5')

### *Nuclear reactions*

<b>H. Weidenmueller</b>	Statistical-model description of gamma decay from compound-nucleus resonances
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(15'+5')

<b>E. Chimanski</b>	Statistical multi-step direct reaction models and the RPA
<b>B. Carlson</b>	The role of nucleon knockout in pre-equilibrium reactions
<b>S. Dimitrova</b>	Proton induced pre-equilibrium reactions to the continuum as a test to the reaction mechanism



## Friday afternoon

**15-17.10** [Chairperson: **T. Kawano**]  
(25'+5')

### *Nuclear reactions*

**J. Escher**

Capture Cross Sections for Unstable Isotopes from  
Surrogate Reaction Data and Theory

(15'+5')

**C. Oprea**

Neutron Capture Cross Sections and Strength Functions  
on  $^{147}\text{Sm}$  Nucleus

**P. Fanto**

Neutron width statistics in a realistic resonance-reaction  
model

**A. Georgiadou**

Transfer reactions induced with  $^{56}\text{Ni}$ : np pairing and  
N=28 shell closure

**F. Galtarossa**

Multinucleon transfer processes in the  $^{197}\text{Au}+^{130}\text{Te}$   
system studied with a high-resolution kinematic  
coincidence

**W. Richter**

Shell-model studies of the astrophysical mirror rp-  
reactions  $^{34}\text{S}(p,\gamma)^{35}\text{Cl}$  and  
 $^{34}\text{g,mCl}(p,\gamma)^{35}\text{Ar}$

TEA BREAK