



**International Symposium on Exotic Nuclei
"EXON - 2004"**

Peterhof, 5-12 July 2004

Scientific Programme

July 5 (MONDAY)

9:30	Conference Hall #1
OPENING	

9:30 – 10:00 Welcoming Speech

SESSION 1	Conference Hall #1
10:00	
	Chairman: Yuri Oganessian

10:00-10:30 Alexey **Korshennikov** (Japan) Recent experimental studies of exotic nuclei

10:35-11:05 Takaharu **Otsuka** (Japan) Shell structure of exotic nuclei and nuclear force

11:10-11:30 Hans **Feldmeier** (Germany) Structure of light exotic nuclei within Fermionic Molecular Dynamics

11:35-11:55	Coffee break	
		Chairman: Walter Greiner

11:55-12:15 Georges **Audi** (France) The 2003 Nubase Evaluation and the 2003 Atomic Mass Evaluation

12:20-12:40 Catherine **Thibault** (France) New mass measurements of short-lived 29-33Mg and ¹¹Li using MISTRAL at CERN

12:45-13:05 Milan **Matos** (Germany) Direct Mass Measurements of Short-Lived Neutron-Rich Fission Fragments at the FRS-ESR Facility at GSI

13:10-13:30 Herve **Savajols** (France) New mass measurements at the neutron drip-line

13:35-15:00	Lunch	
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SESSION 2	Conference Hall #1
15:00	
	Chairman: Masayasu Ishihara

15:00-15:30 Nicolas **Alamanos** (France) Sub Barrier Fusion with Weakly Bound Nuclei

15:35-16:05	Cosimo Signorini (Italy)	Interaction at the Barrier with ^{17}F , ^{11}Be , ^6Li : fusion, breakup, scattering, onto heavy targets ^{208}Pb , ^{209}Bi
16:10-16:30	Stephane Grevy (France)	Spectroscopy at N=28: new evidence for a large region of deformation.
16:35-16:55	Hideki Ueno (Japan)	Nuclear-moment measurements of the light neutron-rich nuclei
17:00-17:20	Jean-Michel Daugas (France)	Nuclear Moment Measurements of Spin-Aligned Isomeric Fragments

17:25-17:45 Coffee break

SESSION 3
17:45

PARALLEL SESSION (Conference Hall #1)

Chairman: Takaharu **Otsuka**

17:45-18:05	Hiroyuki Sagawa (Japan)	New Structure Problems in Light Nuclei
18:10-18:30	Francois Marechal (France)	Structure of the heavy ca isotopes and effective interaction in the sd-fp shell
18:35-18:55	Elizabeth Jones (France)	Unexpected Rapid Variations in Odd-Even Level Staggering in Gamma-Vibrational Bands
19:00-19:20	Alejandro Szanto de Toledo (Brazil)	Interplay Between Fusion and Breakup Processes: Study of the $^{6,7}\text{Li} + ^{12}\text{C}$, ^{59}Co Systems

SESSION 4
17:45

PARALLEL SESSION (Conference Hall #2)

Chairman: Konstantin **Gridnev**

17:45-18:05	Tamas Vertse (Hungary)	A shell model representation with antibound states for analyzing exotic nuclei.
18:10-18:30	Zoltan Elekes (Hungary)	Decoupling of valence neutrons from the core in ^{16}C
18:35-18:55	Stefan Gmuca (Slovakia)	A change of isovector strength of effective interaction for light neutron-rich nuclei

20:00 Dinner

**July 6
(TUESDAY)**

**SESSION 5
9:00**

Conference Hall #1

Chairman: Mikhail **Itkis**

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|-------------|------------------------------------|---|
| 9:00-9:30 | Walter Greiner
(Germany) | Fulleren-Structure in Superheavies,
Nuclei containing Antimatter and Cold Compression |
| 9:35-10:05 | Vladimir Utyonkov
(JINR) | Synthesis and Decay Properties of Superheavy Nuclei |
| 10:10-10:40 | Sigurd Hofmann
(Germany) | Heavy Element Research at GSI |
| 10:45-11:15 | Kosuke Morita
(Japan) | Decay of an isotope $^{277}112$ produced by the $^{208}\text{Pb} + ^{70}\text{Zn}$ reaction |

11:20-11:40 Coffee break

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|-------------|-------------------------------------|--|
| 11:40-12:00 | Adam Sobiczewski
(Poland) | Effect of non-axial shapes of a nucleus on the height of fission barriers of heaviest nuclei |
| 12:05-12:25 | Yasuhisa Abe
(Japan) | Theoretical predictions of excitation functions for synthesis of the superheavy elements |
| 12:30-12:50 | Valeri Zagrebaev
(JINR) | Fusion, fission and quasi-fission |
| 12:55-13:15 | Takahiro Wada
(Japan) | Dynamics of the neck formation and its effect on the fusion probability |

13:30-15:00 Lunch

**PARALLEL SESSION
(Conference Hall #1)**

**SESSION 6
15:00**

Chairman: Igal **Talmi**

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|-------------|---------------------------------------|--|
| 15:00-15:30 | Christophe Theisen
(France) | Spectroscopy of the odd transfermium ^{251}Md and ^{255}Lr nuclei using gamma, electron and alpha spectroscopy |
| 15:35-15:55 | Alexander Yeremin
(JINR) | Gamma spectroscopy of transfermium elements at VASSILISSA set up |
| 16:00-16:20 | Joseph Cugnon
(Belgium) | Spallation reactions on neutron-rich nuclei |
| 16:25-16:45 | Susumu Shimoura
(Japan) | In beam spectroscopy of exotic nuclei via direct reactions of RI beams |

16:50-17:10 Coffee break

SESSION 7 17:10		
		Chairman: Friedrich Goennenwein
17:10-17:30	Christelle Stodel (France)	Search for SHE at GANIL
17:35-17:50	Elena Prokhorova (JINR)	Shell effect manifestation in mass-energy distributions of fission and quasi-fission fragments of nuclei with Z=102-116
17:55-18:10	Galina Kniajeva (JINR)	Fission and quasifission processes in the reactions $^{44}\text{Ca}+^{206}\text{Pb}$ and $^{64}\text{Ni}+^{186}\text{W}$, leading to the formation of compound nucleus ^{250}No
18:15-18:35	Antoine Drouart (France)	Evidence of Z=120 compound nucleus formation from lifetime measurements in the $^{238}\text{U}+\text{Ni}$ reaction at 6.2 MeV/nucleon
18:40-19:00	Jan Kliman (JINR)	Neutron and prompt gamma ray emission in the proton induced fission of ^{239}Np and ^{243}Am and Spontaneous fission of ^{252}Cf .
SESSION 8 15:00		
		PARALLEL SESSION (Conference Hall #2)
		Chairman: Nicolas Alamanos
15:00-15:20	David Verney (France)	Structure of the neutron-rich nuclei close to N=50 towards ^{78}Ni
15:25-15:45	Sarkis Karamyan (JINR)	Comparative analysis of the $^{178\text{m}2}\text{Hf}$ isomer yield
15:50-16:10	Alinka Lepine-Szily (Brazil)	Matter radii of proton-rich Ga, Ge, As, Se, Br nuclei
16:15-16:35	Zdenek Dlouhy (Czech Republic)	Structure of light neutron-rich odd Z nuclei
16:50-17:10	Coffee break	
SESSION 9 17:10		
		PARALLEL SESSION (Conference Hall #2)
		Chairman: Cosimo Signorini
17:10-17:30	Sergei Sidorchuk (JINR)	Complex Study of the Direct Reactions $^2\text{H}(t,p)$ and $^3\text{H}(t,d)$ Induced by 58-MeV Tritons
17:35-17:55	Emilie Rich (France)	Search for "Tetraneutron" via the $\text{D}(^8\text{He}, ^6\text{Li})4\text{n}$
18:00-18:20	Virginie Bouchat (Belgium)	Search for tetraneutrons in the breakup of ^8He
18:25-18:45	Vladilen Goldberg (USA)	Resonance Reactions with Rare Isotope Beams and Nuclear Structure beyond the drip line
20:00		BANQUET

July 7 (WEDNESDAY)**SESSION 10**
09:30**(Conference Hall #1)**

		Chair: Gottfried Muenzenberg
09:30-10:00	Hans Geissel (Germany)	Progress of experiments with stored exotic nuclei at relativistic energies
10:05-10:25	Fadi Ibrahim (France)	The ALTO project at IPN Orsay
10:30-10:50	Hiroari Miyatake (Japan)	Present status of the KEK-JAERI joint RNB project
10:55-11:15	Michiharu Wada (Japan)	The Universal Slow RI-beam Facility at RIKEN RIBF
11:20-11:40	Coffee break	

Chairman: **Sigurd Hofmann**

11:40-12:10	Wladyslaw Henryk Trzaska (Finland)	Decade of research on the K=130 cyclotron in Jyväskylä
12:15-12:35	Toshiyuki Kubo (Japan)	BigRIPS separator at RIKEN RI-beam factory
12:40-13:00	Francesco Cappuzzello (Italy)	Exploring light neutron rich nuclei via the (${}^7\text{Li}, {}^7\text{Be}$) reaction
13:35-15:00	Lunch	

SESSION 11
15:00**(Conference Hall #1)**

		Chairman: Alejandro Szanto de Toledo
15:00-15:20	Rubens Lichtenthaler (Brazil)	First Radioactive Beams in Brasil
15:25-15:45	Remy Anne (France)	Technical status of SPIRAL 2
15:50-16:10	Jonathan Lee (Canada)	Progress of TITAN at Triumf
16:15-16:35	Vechaslav Zhabitsky (JINR)	JINR: International Scientific Centre Bringing Nations Together
16:40-17:00	Svetlana Ivanova (JINR)	JINR University Centre
17:20-20:00	POSTER SESSION	
		Chairman: Yuri Sobolev
20:00	Dinner	

**July 8
(THURSDAY)**

**SESSION 12
09:00**

(Conference Hall #1)

		Chairman: Tohru Motobayashi
09:00-09:30	Friedrich Goennenwein (Germany)	T-odd asymmetries in the Emission of Fragments and Ternary Particles from Fission
09:35-10:05	Joseph Hamilton (USA)	New nuclear structures in neutron rich nuclei
10:10-10:30	Jon Batchelder (USA)	Fine Structure Studies of Proton Emitters at HRIBF
10:35-10:55	Toshio Suzuki (Japan)	Spin-Isospin Properties of Nuclei and Neutrino-Nucleus Reactions

11:00-11:20 Coffee break

		Chair: Dominique Guillemaud Mueller
11:20-11:50	Hans Emling (Germany)	Unstable neutron-rich nuclei studied in high-energy reactions with secondary beams
11:55-12:15	Tacashi Teranishi (Japan)	Resonance scattering experiments with low-energy radioactive beams produced by an in-flight separator
12:20-12:40	Maria Valentina Ricciardi (Germany)	Complex Nuclear-Structure Phenomena Revealed From The Nuclide Production In Fragmentation Reactions
12:45-13:05	Helmut Zeittraeger (Germany)	Russian-German Cooperation at GSI, an example of success and friendship

13:10-15:00 Lunch

**SESSION 13
15:00**

PARALLEL SESSION (Conference Hall #1)

		Chairman: Gurgun Ter-Akopian
15:00-15:30	Alexei Ogloblin (Russia)	"Abnormal nuclear dispersion" in heavy-ion scattering: manifestation of exotic nuclear excitation?
15:35-16:05	Andrea Vitturi (Italy)	Reactions with weakly-bound nuclei at the Coulomb barrier
16:10-16:30	Yuri Sobolev (JINR)	Energy dependence of total reaction cross section of the ${}^4,6\text{He} - {}^{28}\text{Si}$ interaction at 5-30 AMeV
16:35-16:55	Arcady Yukhimchuk (Russia)	System for Feeding Hydrogen Isotope Gases Into a Cyclotron Ion Source

SESSION 14
15:00

PARALLEL SESSION (Conference Hall #2)

Chairman: Sergei **Dmitriev**

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|-------------|--------------------------------------|---|
| 15:00-15:30 | Andreas Tuerler
(Germany) | Future Experiment on the Chemical Properties of Superheavy Elements |
| 15:35-16:05 | Ivo Zvara
(JINR) | Chemistry of SHE: What Allows us to Judge the Bulk Properties of Compounds from the Behavior of Single Molecules? |
| 16:10-16:30 | Valeria Pershina
(Germany) | Theoretical Predictions for the Chemical Identification of Superheavy Elements. Role of Relativistic Effects |
| 16:35-16:55 | Olivier Bajeat
(France) | Optimization of ISOL UCx targets for fission induced by fast neutrons or electrons. Application for the Spiral 2 project and for the Alto project |

17:30-18:30 **Dinner**

18:30 **Departure from Peterhof**

Boarding the ship
At 21:00

July 9
(FRIDAY)

Excursion to Valaam Island
(old secluded monastery of Valaam)

July 10
(SATURDAY)

ARRIVAL from Valaam Island

11:00-11:30 **Coffee break**

SESSION 15
11:30

(Conference Hall #)

Chairman: Marek Lewitowicz

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|-------------|-------------------------------------|--|
| 11:30-11:50 | Abdenbi Khouaja
(France) | Reaction cross section measurements of neutron-rich exotic nuclei in the vicinity of closed shells N=20 and N=28 |
| 11:55-12:15 | Marcos Alvarez
(France) | A global optical potential to study exotic and weakly bound nuclei interactions. |
| 12:20-12:40 | Alexander Lisetskiy
(USA) | Shell model treatment of neutron-rich nuclei near ⁷⁸ Ni |
| 12:45-13:05 | Grigor Chubaryan
(USA) | Expectations in Heavy Element Research with Radioactiv Beams |

13:30-15:00 **Lunch**

SESSION 16
15:00

(Conference Hall #)

Chairman: Yasuhisa Abe

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|-------------|-------------------------------------|--|
| 15:00-15:20 | Yogy Gambhir
(India) | Systematic of Superheavy nuclei: Microscopic Descript |
| 15:25-15:45 | George Goncharov
(Russia) | Nucleosynthesis and search for superheavy elements (Z=108-126) in nature: the possible scenario |
| 15:50-16:10 | Yuri Pyatkov
(Russia) | Observation of the multicluster decays of the ²⁵² Cf nucleus at the modified FOBOS spectrometer |

16:15-16:40 **Coffee break**

Chairman: Andrej Kugler

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|-------------|--------------------------------------|--|
| 16:40-17:00 | Igor Izosimov
(Russia) | Decay schemes of nuclei far from stability |
| 17:05-17:25 | Yuri Gangrsky
(JINR) | Laser spectroscopy of transuranium elements |
| 17:30-17:50 | Zdzislaw Blaszcak
(Poland) | Prospects of laser spectroscopy in the study of nuclear matter |

20:00 **Dinner**

**July 11
(SUNDAY)**

**SESSION 17
09:00**

Chairman: **Dominique Goutte**

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|-------------|---|---|
| 09:00-9:30 | Gottfried Muenzenberg
(Germany) | NUSTAR, Nuclear structure research within the GSI project objectives and organization |
| 09:35-10:05 | Marek Lewitowicz
(France) | Physics with SPIRAL2 |
| 10:10-10:40 | Georgy Gulbekian
(JINR) | Status report and development of the FLNR cyclotrons |

10:45-11:05 [Coffee break](#)

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|-------------|--|--|
| 11:05-11:35 | Tohru Motobayashi
(Japan) | Perspective of RI Beam Based Research at RIKEN |
| 11:40-12:10 | Andrej Kugler
(Czech Republic) | Public Awareness of Nuclear Science in Europe |

12:15-12:25 [Coffee break](#)

12:30-13:30

Round Table, Closing session

**Yuri Oganessian,
Gottfried Muenzenberg,
Tohru Motobayashi,
Dominique Goutte,
Masayasu Ishihara,
Walter Greiner,
Andrej Kugler,
Dominique Guillemaud Mueller**

13:30-15:00 [Lunch](#)

15:00

[Excursion to the Hermitage](#)

20:00

[Farewell party in President press-centre](#)

**July 12
(MONDAY)**

Departure, Check out 12:00 O'Clock

July 7
(WEDNESDAY)

POSTER SESSION

17:20-20:00

	Name	TITLES
1.	Farid Abdullin (JINR)	New Data on Average Charge Values of Heavy Nuclei
2.	Nassima Allial (Algeria)	Particle-Number Projection in the T=1 Neutron-Proton Pairing
3.	Yoshihiro Aritomo (JINR)	Fusion-fission dynamics for synthesis of superheavy elements
4.	Anatoli Artukh (JINR)	On the Formation Mechanism of Forward-Angle Products in The Reactions $^{18}\text{O}(35\text{ MeV/u}) + ^{181}\text{Ta}(^9\text{Be})$
5.	Anatoly Barzakh (Russia)	On-line Production of Rb and Cs isotopes from Uranium Carbide Targets
6.	Alexei Bogachev (JINR)	Yield of correlated fragment pairs in the reaction $^{18}\text{O} + ^{208}\text{Pb} \rightarrow ^{226}\text{Th}$ obtained in γ - γ -coincidence method
7.	Evgeni Cherepanov (JINR)	Shell Correction Effects in Quasi-Fission Reactions Leading to the Synthesis of Superheavy Elements
8.	Leonid Chulkov (Russia)	Three-body correlations in dissociation ^6He
9.	Alla Demyanova (Russia)	Refractive behaviour of $^{16}\text{O} + ^{14}\text{C}$ scattering
10.	Mohini Gupta (India)	Microscopic Description of alpha-decay Chains for Z=115 and 118
11.	Julia Itkis (JINR)	Neutron Emission in Fission and Quasi-Fission
12.	Dmitri Kamanin (JINR)	1-The Modified Mini-FOBOS setup 2-Data processing in cluster tripartition experiments 3-Experimental study of multi-cluster decays at the modified FOBOS and mini-FOBOS setups
13.	Kairat Kuterbekov (Kazakhstan)	1-Interaction of ^4He – particles with stable nuclei and effective nucleon-nucleon forces 2-Energy dependence of total reaction cross sections for $^4\text{He} + ^{28}\text{Si}$ interaction from the coulomb barrier to 200 MeV
14.	Sergey Klygin (JINR)	Combas Separator Multichannel Electronics System For Correlation Experiments
15.	Lubos Krupa (JINR)	Neutron and prompt gamma ray emission in the proton induced fission of ^{239}Np and ^{243}Am and spontaneous fission of ^{252}Cf
16.	Yuliya Lashko (Ukraine)	Effective interaction generated by the Pauli exclusion principle in collisions of the light neutron-rich nuclei
17.	Yuri Lobanov (JINR)	Radioactive properties of the heavy isotopes with Z= 112 and Z=114
18.	Sergei Lukyanov (JINR)	Neutron drip line and peculiarities of O-Mg isotopes

19. **Magda Metskhvarishvili**
(Georgia) Investigation of multipolarity for some g-transitions of ^{151}Eu
20. **Vladimir Maslov**
(JINR) Elastic and Inelastic Scattering of ^6Li on ^{12}C at 63 MeV
21. **Andre Popeko**
(JINR) Evaluation of charge distributions of ^{217}Th and ^{254}No ions separated by VASSILISSA
22. **Galina Popeko**
(JINR) New data on the ternary fission of ^{252}Cf from the gamma-ray spectroscopy
23. **Igor Pokrovskiy**
(JINR) Multimodal Fission In Heavy Ions Induced Reactions
24. **Yevgeny Ryabov**
(Russia) Statical and statistical properties of heated rotating nuclei in the temperature - ependent finite-range model
25. **Roman Sagaidak**
(JINR) Nucleus-nucleus potentials from deep sub-barrier fusion and cluster decay
26. **Eloisa Szanto**
(Brazil)
27. **Hans-Joachim Schoett**
(Germany) Improvement of the SHIP Target Wheel
28. **Nikolai Skobelev**
(JINR) Delayed fission of heavy nuclei
29. **Vyacheslav Samarin**
(Russia) Time-dependent quantum analysis of neutron transfer in heavy ion fusion Reactions
30. **Yuri Sereda**
(JINR) Multichannel electronics setup for COMBAS separator
31. **Sergei Stepantsov** ^5H and ^5He ($T=3/2$) nuclei observed in $^6\text{He}(d, ^3\text{He})$ and $^6\text{He}(d, t)$ transfer reactions at 25 AMeV
32. **Alexander Svirikhin**
(JINR) Neutron detector at the focal plane of the set up VASSILISSA
33. **Oleg Tarasov**
(USA) LISE++ development: application to low-energy fission of projectiles at relativistic energies
34. **Svetlana Tretyakova**
(JINR) Search of cluster decay of ^{223}Ac
35. **Alexei Voinov**
(JINR) The detection system of the Dubna Gas-filled Separator for SHE's search
36. **Philip Arthur Wilk**
(USA) Development of a plutonium ceramic target for the MASHA separator
37. **Roman Wolski**
(JINR) $(\alpha, 2\alpha)$ quasifree scattering with ^6He and ^8He secondary beams on ^4He target
38. **Alexander Yakushev**
(Germany) 1-Approaching experiments with element 114 first results of test experiments
2-Cross sections measurement in fusion reactions $^{36}\text{Ar}(^{148}\text{Sm}, xn)$
39. **Victor Zlokazov**
(JINR) On analysis of data of radioactive decays under conditions of Poor statistics and small observation time
40. **Lina Zuffi**
(Italy) Beta Decay of Odd-Mass As-Ge Isotopes in the Interacting Boson-Fermion Model
41. **Andrey Zubov**
(JINR) Survival probabilities of superheavy nuclei with recent predictions of nuclear properties