



ZERO-DEGREE WORKSHOP OF AGATA@LNL

INFN, LABORATORI NAZIONALI DI LEGNARO
19-20 APRIL 2023

SCIENTIFIC PROGRAMME

Wednesday, 19th April 2023

8:30 – 9:00 **Registration**

9:00 **Welcome Address 5'**

Speaker: Fabiana Gramegna (INFN-LNL Director)

9:05 **Accelerator status 15'**

Speaker: E. Fagotti

9:20 **SPES status 15'**

Speaker: T. Marchi

9:35 **AGATA project 25'**

Speaker: E. Clement

10:00 **AGATA campaign at LNL and zero-degrees campaign 20'**

Speaker: J.J. Valiente-Dobón

10:20 **Heavy-ion recoil separator 20'**

Speaker: I. Martel

10:40 **Summary of zero-degree Lols 20'**

Speaker: M. Zielińska

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

11:30 - 13:30 **Session: GDR – High spin**

11:30 **Coupling PARIS with AGATA 15'**

Speaker: A. Maj

11:45 **The search for Jacobi shape transitions and related phenomena in hot rotating nuclei 15'**

Speaker: A. Maj

12:00 **GDR feeding of Super-Deformed states in ^{143}Eu 15'**

Speaker: F. Camera

12:15 **High Spin States and Exotic Shapes in Nuclei close to ^{40}Ca** 15'

Speaker: P. Bednarczyk

12:30 **Use of AGATA array in studies of the quadrupole and octupole deformation in $^{43,44}\text{Sc}$** 15'

Speaker: P. Bednarczyk

12:45 **High-Spin Studies with AGATA – A physics campaign** 15'

Speaker: G. Duchene

13:00 **Excitation energy, spin and parity determination in identical superdeformed bands** 15'

Speaker: G. Duchene

13:15 **Quadrupole moments of high-spin isomers with AGATA** 15'

Speaker: M. Rocchini

13:30 - 14:30 **Lunch break**

14:30 – 16:00 **Session: Around ^{100}Sn and nuclear shapes**

14:30 **Spectroscopy in $^{102,103}\text{Sn}$ and lifetime measurements in ^{103}Sn** 15'

Speaker: G. Pasqualato

14:45 **Direct measurement of proton-neutron matrix elements by studying ^{100}In** 15'

Speaker: M. Palacz

15:00 **Evolution of collectivity in the N=50 isotones towards ^{100}Sn** 15'

Speaker: R.M. Perez-Vidal

15:15 **Electron conversion measurements with SLICES and AGATA** 15'

Speaker: N. Marchini

15:30 **Structure of neutron-rich Ge isotopes in vicinity of the double-magic ^{78}Ni** 15'

Speaker: F. Didierjean

15:45 **Lifetime measurements of excited states in ^{18}C and ^{16}C : a test of 3N forces** 15'

Speaker: F. Crespi

16:00 - 16:30 **Coffee break**

16:30 – 17:45 **Session: Nuclear shapes and isospin**

16:30 **Search for structures built on the isomeric 0^+ state in ^{96}Sr** 15'

Speaker: L. Iskra

16:45 **Search for deformed structures in neutron-rich Nb isotopes by γ spectroscopy** 15'

Speaker: L. Iskra

17:00 **Shape coexistence and mixing in the N=Z=34 ^{68}Se** 15'

Speaker: S.M. Lenzi

17:15 **Lifetime measurements in ^{88}Ru - ^{84}Mo** 15'

Speaker: A. Gottardo

17:30 **Lifetime measurements in the self-conjugate nuclei in the middle part of the fp-gd space** 15'

Speaker: A. Ertoprak

Thursday, 20th April 2023

9:00 – 11:00 **Session: Isospin and N~Z**

- 9:00 **Looking for the delayed alignment in ^{80}Zr** 15'
Speaker: J. Ha
- 9:15 **Octupole and non-Yrast states in ^{80}Zr** 15'
Speaker: A. Gadea
- 9:30 **Level structures in the N=Z ^{96}Cd nucleus in the ^{100}Sn region** 15'
Speaker: A. Ertoprak
- 9:45 **Lifetime measurements of excited states in the ^{45}V and ^{53}Co nuclei** 15'
Speaker: R. Escudeiro
- 10:00 **Probing isospin symmetry in A=42 isobaric triplet through E2 transitional matrix elements** 15'
Speaker: K. Rezykina
- 10:15 **Isospin mixing in the A=38 T=1 triplet: Branching ratios of the 2^+_1 in ^{38}K** 15'
Speaker: S. Pigliapoco
- 10:30 **Umbrella Lol for GRIT** 15'
Speaker: D. Beaumel
- 10:45 **Study of the (d,p γ) reaction on radioisotope ^{75}Ga to constrain i-process nucleosynthesis** 15'
Speaker: S. Carollo

11:00 – 11:30 **Coffee break**

11:30 – 13:30 **Session: Towards ^{132}Sn**

- 11:30 **Probing the doubly magic shell closure at ^{132}Sn by Coulex of n-rich $^{130,132}\text{Sn}$** 15'
Speaker: P. Reiter
- 11:45 **Coulomb-excitation measurements of nuclei around ^{132}Sn** 15'
Speaker: A. Nannini
- 12:00 **Study of direct reactions using CHyMENE target** 15'
Speaker: I. Zanon
- 12:15 **DSAM measurement in ^{132}Sn using direct reaction** 15'
Speaker: E. Clement
- 12:30 **Nuclear structure studies around ^{132}Sn with tritium target** 15'
Speaker: S. Bottoni
- 12:45 **Direct reactions for populating states above and below Sn for nuclear spectroscopy and astrophysics** 20'
Speaker: D. Mengoni
- 13:05 **Lifetime and spectroscopy measurement in $^{131,132,133}\text{Sn}$ from (d,p), (^4He , ^3He), (^{13}C , ^{12}C)** 15'
Speaker: A. Gottardo
- 13:20 **Robustness of Z=50 shell closure as a function of isospin in tin isotopes** 15'
Speaker: A. Gottardo

13:35 - 14:45 **Lunch**

14:45 – 16:00 **Session: Towards ^{132}Sn and direct reactions**

14:45 **Structure of Sb nuclei around ^{132}Sn as a testing ground for realistic shell model interaction** 15'
Speaker: S. Bottoni

15:00 **Investigation of the microscopic structure of PDR in ^{132}Sn using transfer reactions** 15'
Speaker: D. Beaumel

15:15 **SUGAR as a windowless Jet target for developing pure target nuclear reactions at LNL** 15'
Speaker: E. Chavez Lomeli

15:30 **Searching for the excited state levels above the Hoyle State and SUGAR commissioning; Study of the $^9\text{Be}(\alpha, n)^{12}\text{C}$ reaction; The $^{16}\text{O}+^{16}\text{O}$ reaction and the impact on nucleosynthesis in massive stars (SUGAR LOI); Study of the structure of ^{12}C excited states through $^4\text{He}(^{12}\text{C}, ^{12}\text{C}^*)^4\text{He}$ reaction** 30'
Speaker: A.M. Sanchez Benitez

16:00 – 16:30 **Coffee break**

16:30 – 17:45 **Session: Light nuclei and astrophysics**

16:30 **Lifetime meaSurement with AGATA for AstrophysiCs – ^{21}Na (ISAAC-21)** 15'
Speaker: D. Piatti

16:45 **Gamma decay from near-threshold states in light nuclei** 15'
Speaker: G. Corbari

17:00 – 18:00 **General discussion**

20:30 **Workshop Dinner**