

# Workshop of the Espace de Structure Nucléaire Théorique at Saclay

## Importance of continuum coupling for nuclei close to the drip-lines

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CEA/SPhN, Orme des Merisiers, build. 703, rooms 125-135

### I. PROGRAM

Monday 18	Tuesday 19	Wednesday 20
9h15 E. Khan	9h15 P. Chau Huu-Tai	9h15 N. Orr
10h00 K. Yoshida	10h00 D. Lacroix	10h00 J. Tostevin
10h45 <b>Break</b>	10h45 <b>Break</b>	10h45 <b>Break</b>
11h15 N. Hinohara	11h15 G. Orlandini	11h15 N. Schunck
12h00 G. Papadimitriou	12h00 K. Nollett	12h00 P. Ring
12h45 <b>Lunch</b>	12h45 <b>Lunch</b>	12h45 <b>Lunch</b>
14h30 T. Vertse	14h30 P. Descouvemont	14h30 K. Bennaceur
15h15 G. Hagen	15h15 I. Tanihata	15h15 N. Michel
16h00 <b>Break</b>	16h00 <b>Break</b>	16h00 <b>End</b>
16h30 J. Rotureau	16h30 H. Masui	
17h15 <b>End</b>	17h15 <b>End</b>	

### II. LIST OF TALKS

- K. Bennaceur, "Skyrme functional and halo systems"
- P. Chau Huu-Tai, "CDCC and deformed nuclei"
- P. Descouvemont, "Cluster models"
- G. Hagen, "CC method"
- N. Hinohara, "Oblate-prolate shape mixing in proton-rich Se isotopes as large amplitude collective motion"
- H. Masui, "COSM"
- E. Khan, "QRPA calculations"
- D. Lacroix, "Time-dependent density matrix method and the breakup of Borromean systems"
- N. Michel, "Gamow Shell Model and Gamow/HFB"
- K. Nollett, "GFMC"
- G. Orlandini, "LIT"
- N. Orr, "Structure of unbound nuclei beyond drip-line"
- G. Papadimitriou, "Charge radii in halo nuclei"
- P. Ring, "RMF"
- J. Rotureau, "DMRG and SMEC"
- N. Schunck, "HFB using a Woods-Saxon basis expansion"
- I. Tanihata, "Halos in light nuclei"
- J. Tostevin, "Spectroscopic factors"
- T. Vertse, "Complex Energy Shell Model"
- K. Yoshida, "Collective modes of excitation in deformed neutron-rich nuclei"

### III. GOALS OF THE WORKSHOP

The goals of the proposed workshop are the following :

1. present the most recent works on shell model (SMEC, GSM, DMRG) and other few-body methods (cluster models, COSM) with coupling to the continuum,
2. discuss quasi-exact methods (CC, GFMC) performed in terms of realistic interactions
3. discuss the different methods available for HFB, QRPA, TDHF(B) calculations of weakly bound and possibly unbound nuclei
4. discuss phenomena specific to drip-lines (halos, proton and neutron emission, resonant states, shell closures, BSEC, Fano resonances, collective effects)
5. present reaction models for drip-line nuclei (CDCC, LIT), and consider the problem of a model-independent determination of spectroscopic factors,
6. review experimental methods used to study exotic nuclei.

### IV. USEFUL REFERENCES

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