

# Curriculum Vitae

## Jose Nicolas Orce

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Born: 01/10/1972 in Almuñécar (Granada) Spain

Marital Status: Married

Nationality: Spaniard

### EDUCATION

- ◆ **Licenciatura (5 Years Degree) in Fundamental Physics** (1993 -1999)  
University of Granada, Granada, Spain.
- ◆ **Electronic Engineering** (1999)  
Electromagnetic Pulse (EMP), Nuclear Origin and Effects in Electronic Devices (Shielding Theory),  
Universidad de Granada, Granada, Spain.
- ◆ **Ph.D. in Experimental Nuclear Physics** (2000 - 2003)  
*"Multi-quasiparticles and shape-driving effects in  $^{128}\text{Xe}$ ,  $^{127}\text{I}$  and  $^{125}\text{Sb}$ "*  
Supervisor: Prof. Alison M. Bruce, University of Brighton, Brighton, East Sussex, UK.
- ◆ **Workshops and Summer Schools:**
  - ⊕ Mathematical Methods applied to Science, Almuñécar, University of Granada (1999).
  - ⊕ Nuclear Models: Tilted Axis Cranking (TAC), Cranked Nilsson Strutinsky (CNS), Ultimate Cranker (UC). Strasbourg Theory Workshop, June 4-9, 2001.
  - ⊕ UK Summer School in Nuclear Physics, Sept 2-17, 2001, Bangor (Wales, UK).
  - ⊕ RIA Summer School on Exotic Beam Physics, Jul 31-Aug 6, 2005, Berkeley (CA, USA).
  - ⊕ Nuclear Astrophysics School on Nuclear Shell Model Applications, Feb 13-18, 2006, Michigan State University (MI, USA).
  - ⊕ RIA Summer School on Exotic Beam Physics, July 17-22, 2006, Oak Ridge (TN, USA).
- ◆ **Postdoctoral Scholar**  
University of Kentucky, Lexington, Kentucky, USA (2003 - 2006),  
Professors: M. T. McEllistrem and S. W. Yates.
- ◆ **Research Associate**  
University of Kentucky, Lexington, Kentucky, USA (2006 - 2008),  
Professors: M. T. McEllistrem and S. W. Yates.
- ◆ **Temporary Faculty Position**  
Eastern Kentucky University, Richmond, Kentucky, USA (2007).
- ◆ **Postdoctoral Research Fellow**  
TRIUMF/ISAC, Vancouver, British Columbia, Canada (2008-2009).

## RECENT TALKS, POSTERS AND SEMINARS

- High Spin Structure in  $^{128}\text{Xe}$  (talk)  
North-West European Nuclear Physics Conference 2001 (Bergen, Norway).
- Study of the  $K^\pi = 8^-$  isomeric decay in the N=74 isotone  $^{128}\text{Xe}$  (poster)  
Physics of Unstable Nuclei 2001 (Yukawa Institute, Kyoto, Japan).
- Frontiers of K-isomerism in the mass A ~ 130 region (poster)  
Frontiers of Nuclear Structure 2002 (Berkeley, California, USA).
- Gamma-softness vs K-isomers in the mass A ~ 130 region (talk)  
XXXVII Zakopane School of Physics 2002, Trends in Nuclear Physics (Zakopane, Poland).
- Isospin symmetry in the A=42 isobars (poster)  
International conference on Nuclear Physics 2004 (Morelos, Mexico).
- Identification of mixed-symmetry states in an odd-A nucleus:  $^{93}\text{Nb}$  (poster)  
The Fourth International Conference on Exotic Nuclei and Atomic Masses, ENAM 2004 (Pine Mountain, GA, USA).
- Study of  $0^+$  excitations in  $^{208}\text{Pb}$  (talk)  
NUSTAR 2005, International conference on the interface between Nuclear Structure, Astrophysics and Reactions (University of Surrey, Guildford, UK).
- Complex two-phonon and mixed-symmetry states in  $^{93}\text{Nb}$  (talk)  
Yale Workshop 2005, Nuclear Structure Physics near the Coulomb Barrier (Yale University, New Haven, USA).
- Isospin symmetry of isobaric triplets along the N ~ Z line (poster)  
Gordon Conference 2005, Nuclear Structure (New London, NH, USA).
- Negative-parity mixed-symmetry states in  $^{93}\text{Nb}$  (talk)  
RIA Summer School on Exotic Beam Physics 2005 (88-Inch Cyclotron Lawrence Berkeley National Laboratory, Berkeley, CA, USA).
- Identification of mixed-symmetry states in an odd-mass nearly spherical nucleus (invited talk)  
Contemporary Frontiers in Nuclear Structure, American Chemical Society Meeting 2006 (Atlanta, GA, USA)
- Coupling between bosonic and fermionic degrees of freedom in  $^{93}\text{Nb}$  (invited talk)  
2006 Division of Nuclear Physics Annual Meeting, APS (Nashville, TN, USA).
- Anomalous behaviour of the  $2^+$  mixed-symmetry state in  $^{94}\text{Zr}$  (talk)  
2007 American Physical Society April Meeting, (Jacksonville, FL, USA).
- Exotic low-energy vibrational modes (invited talk)  
2007 American Physical Society April Meeting, (Jacksonville, FL, USA).
- TinTin and the loss of collectivity (talk)  
Yale Workshop 2007, Nuclear Structure Physics near the Coulomb Barrier (Yale University, New Haven, USA).
- A new coupling between fermionic and bosonic degrees of freedom (invited talk)  
Gordon Conference 2007, Nuclear Structure (New London, NH, USA).

- TinTin and the gain of collectivity (**invited talk**)  
XXXIst Symposium on Nuclear Physics, Cocoyoc, Morelos, Mexico (2008)
- Pairing-gap vibrations as a new mechanism of nuclear collectivity (**invited talk**)  
Nuclear Structure 2008 (Michigan State University, East Lansing, MI, USA)
- Seminars given at the University of Brighton, University of Kentucky (several), University of Cologne, Universidad Nacional Autonoma de Mexico, Stony Brook University, University of Tennessee and Argonne National Laboratory.

## **TEACHING EXPERIENCE**

- Physics Tutor Online (www.tutornet.com) (1999-2000).
- Private Tutor (Mathematics, General Physics, Waves and Oscillations) (1999-2000).
- Isospin Physics ( University of Kentucky, Spring 2004).
- ASTRONOMY 192, Stars, Galaxies and the Universe (University of Kentucky, Summer 2006).  
Complete course responsibility: lecturing, writing examinations, assigning course grades.  
Course Evaluation: 3.4 out of 4.
- ASTRONOMY 130, In Quest of the Universe (Eastern Kentucky University, Spring 2007).  
Complete course responsibility: lecturing, writing examinations, assigning course grades.  
No evaluation.
- PHYSICS 231: Classical Mechanics and Waves (University of Kentucky, Summer 2007).  
Complete course responsibility: lecturing, writing examinations, assigning course grades.  
Course Evaluation: 3.1 out of 4.
- PHYSICS 232: Electromagnetism (University of Kentucky, Summer 2008).  
Complete course responsibility: lecturing, writing examinations, assigning course grades.  
Course Evaluation: 3.1 out of 4.
- Teaching and supervising graduate students in our Low-Energy Nuclear Physics Group (University of Kentucky).

## **RESEARCH SKILLS AND EXPERIENCE**

- Experiments carried out at the Australian National University, GANIL, Yale University, University of Notre Dame, University of Cologne, Duke University (TUNL) and University of Kentucky.
- Theoretical calculations: Shell model configuration mixing codes (*ANTOINE*, *OXBASH*), IBM-2, Cranked shell models, CINDY, Potential Energy Surface calculations, BCS, DSAM,...
- Referee of Physical Review C (American Physical Society).
- Editorial Board Member of The Open Nuclear & Particle Physics Journal (Bentham).
- Computer ability.  
Operating systems: UNIX, Linux, DCP and Windows.  
Scientific editor: Latex.  
Mathematica, Origin, MS Office applications and image processing.  
Programming: Web Page Builder [1,2] and C++.

- ✿ **Data Analysis:** Radware Package (including coincidence data: matrices and cubes), ROOT, CNE, PACE, CASCADE, ANA, Sort-shell, TV, SpecTcl, Midas,...
- ✿ Completion of FN Tandem Accelerator (U. of Notre Dame) and Electrostatic Accelerator Operator (U. of Kentucky).
- ✿ Radiation Safety and Treatment of Radioactive Materials (University of Kentucky, USA).
- ✿ Target Maker with Evaporation and Electron Gun Techniques.
- ✿ Chemical Hygiene Plan/Laboratory Safety Certificate (University of Kentucky, USA).
- ✿ *TRIUMF* and *ATLAS* user.

### **OTHER SKILLS AND INTERESTS**

- ✿ Native Spanish, fluent in English, and basic knowledge of Italian and German.
- ✿ U.S. Driving license and H1b Visa.
- ✿ Member of the American Physical Society and Institute of Physics.
- ✿ **Other Interests:** Drawing cartoons [3], History and Philosophy of Science, Traveling, Wildlife and Archeology, Reading, Playing Tennis, Football and Basketball.

### **REFERENCES**

- [1] Personal web page: <http://www.pa.uky.edu/~jnorce/>
- [2] UK low-energy nuclear physics group's web page: <http://www.pa.uky.edu/marcus/nukes.html>
- [3] Isomeric and the mysterious case of The Radioactive Mango, Dialogues and drawings by J.N. Orce, <http://www.pa.uky.edu/~jnorce/radioactivemango0.html>