Giuseppe Bevilacqua

Curriculum Vitae

Personal information

first name	Giuseppe
last name	Bevilacqua
place and date of birth	Melissa (Italy), 11 February 1971
nationality	Italian
address	Dipartimento di Scienze Fisiche, della Terra e dell'Ambiente, via Roma 56, 53100 Siena, Italy
tel	+39 0577 234673
skype	giuseppe.bevilacqua71
email	giuseppe.bevilacqua@unisi.it

Education

2000 **Ph.D. in Physics**, *University of Pisa*, Italy.
- Advisor: Prof. Liana Martinelli
- Title: Optical properties in vibronic localized systems

1995 **Master Degree (Laurea) in Physics**, *University of Pisa*, Italy.
- Advisor: Prof. Liana Martinelli
- Title: Studio dell'effetto Jahn-Teller in ZnS:Fe^{2+} con un nuovo metodo ricorsivo

Current and previous positions

nov06 – pres **Assistant Professor in Physics (SSD: FIS/01 – 02/B1)**, *University of Siena*, Italy.

oct05–oct06 **Assegnista di ricerca**, *Dipartimento di Fisica dell'Università di Siena*, Italy.

jun02–sep05 **Contrattista**, *Dipartimento di Fisica dell'università di Siena nell'ambito del progetto europeo G6RD-CT-2001-00642 "New Magnetometer"*, Italy.

jun00–jun02 **Assegnista di Ricerca**, *Dipartimento di Fisica dell'università di Pisa*, Italy.

Scientific Interests

My research interests are of theoretical nature and spans a range of different phenomena from quantum optics, solid state physics and phase transitions in liquid crystals. I am also interested in developing applications of quantum optical phenomena. This results in a large modelling activity of optical atomic magnetometers, whose working principle relies on optical pumping and quantum interference. I am interested in Coherent Population Trapping in multilevel atomic systems, and in the possibility of using the related Stimulated Raman Adiabatic Passage to control the quantum state of cavity-QED systems. I am also interested in the Freedericksz transition in both nematic and smectic liquid crystals. During my PhD I worked on solid state physics topics like the electron-phonon interaction and the Jahn-Teller effect. More recently I am working on the modeling of the thermoelectrics efficiency of nanoscale devices.

Membership

2023-pres Member of the *VIRGO Collaboration*

1999-pres Member of the Italian *Gruppo Nazionale per la Fisica Matematica (GNFM).*

1999-2005 Member of the Italian *Istituto Nazionale per la Fisica della Materia (INFM).*

Research Grants

2021-2022 Progetto PhAST finanziato dalla Regione Toscana (soggetto capofila Aerospazio Tecnologie)

2014-2015 GNFM project *Collasso meccanico di membrane biologiche confinate*, P.I. Dr. S. Turzi.

2012-2015 Progetto FIRB RBAP11ZJFA *Idrogeli nanocompositi ibridi contenenti nanoparticelle ferromagnetiche per il trattamento di tumori ossei primitivi e secondari*

2002-2005 European project *New Magnetometer* G6RD-CT-2001-00642, P.I. Prof. L. Moi

Teaching Experience

2023-pres Università di Siena, Course of *Meccanica Statistica*, undergraduate programme in *Fisica e Tecnologie Avanzate*

2019-pres Università di Siena, Course of *Mathematical Physics*, graduate programme in *Applied Mathematics*

2011-19 Università di Siena, Course of *Probabilità e Statistica*, undergraduate programme in *Ingegneria Gestionale*

2009-11 Università di Siena, Course of *Fisica dei Semiconduttori*, graduate programme in *Ingegneria Elettronica e delle Telecomunicazioni*

2005-06 Università di Siena, Course of *Fisica dello Stato Solido*, graduate programme in *Fisica e Tecnologie Avanzate*

2005 Università di Siena, Course of *Complementi di Elettromagnetismo Classico*, undergraduate programme in *Fisica e Tecnologie Avanzate*

2004 Università di Siena, Course of *Fisica Moderna*, undergraduate programme in *Fisica e Tecnologie Avanzate*

2002-11 Università di Siena, Course of *Fisica Generale I*, undergraduate programme in *Ingegneria dell'Automazione*

Students

Bachelor 2020 – Espansione di Floquet-Magnus applicata alla dinamica di spin inequivalenti (E. Pannini)

Bachelor 2013 – Sviluppi non-Lineari in un Magnetometro Atomico Ottico Auto-Oscillante (B. De Ieso)

PhD 2010 – Supervision of the activity of K. Khanbekyan – Advisor Prof. L. Moi

Master 2010 – Coherent Population Trapping con campo modulato. (E. Cali)

Conferences Organization

1998 Scientific secretary in the local organizing committee of the *XIV International Symposium on Electron-Phonon Dynamics and Jahn-Teller Effect* – Erice 7–13 july, 1998.

Referee Activity

Served as referee for the journals: *Phys. Rev. B, Phys. Rev. A, Phys. Rev. Lett., Review of Scientific Instruments, Journal of Phys.: Condensed Matter, Optics Express, Optics Letter, European Physical Journal Plus* .

Served as referee for the *Polish National Research Agency.*

Publications

2023 Bevilacqua, Giuseppe, Valerio Biancalana, Mario Carucci, et al. (2023). "A Wearable Wireless Magnetic Eye-Tracker, in-vitro and in-vivo tests". In: *IEEE TRANSACTIONS ON BIOMEDICAL ENGINEERING*, pp. 1–10. DOI: 10.1109/TBME.2023.3286424. URL: https://ieeexplore.ieee.org/document/10153628.

Bevilacqua, Giuseppe, Valerio Biancalana, and Yordanka Dancheva (2023). "Dynamic Response of a Light-Modulated Magnetometer to Time-Dependent Fields". In: *ATOMS* 11.8. DOI: 10.3390/atoms11080111.

Fregosi, Alessandro et al. (Sept. 2023). "Floquet space exploration for the dual-dressing of a qubit". In: *Scientific Reports* 13.1, p. 15304. ISSN: 2045-2322. DOI: 10.1038/s41598-023-41693-2. URL: https://doi.org/10.1038/s41598-023-41693-2.

2022 Bellizzi, Lorenzo et al. (2022). "An innovative eye-tracker: Main features and demonstrative tests". In: *Review of Scientific Instruments* 93.3, p. 035006. DOI: 10.1063/5.0079779. URL: https://doi.org/10.1063/5.0079779.

Bevilacqua, Giuseppe and Ennio Arimondo (June 2022). "Bright and dark Autler–Townes states in the atomic Rydberg multilevel spectroscopy". In: *Journal of Physics B: Atomic, Molecular and Optical Physics* 55.15, p. 154001. DOI: 10.1088/1361-6455/ac7684. URL: https://doi.org/10.1088/1361-6455/ac7684.

Bevilacqua, Giuseppe, Valerio Biancalana, T. Zanon-Willette, et al. (Feb. 2022). "Harmonic dual dressing of spin-1/2 systems". In: *Phys. Rev. A* 105, p. 022619. DOI: 10.1103/PhysRevA.105.022619. URL: https://link.aps.org/doi/10.1103/PhysRevA.105.022619.

Bevilacqua, Giuseppe, Alessandro Cresti, Giuseppe Grosso, Guido Menichetti, and Giuseppe Pastori Parravicini (2022). *Quantum bounds for power production, efficiency and thermal currents in thermoelectric nanostructures*. DOI: 10.48550/ARXIV.2206.00294. URL: https://arxiv.org/abs/2206.00294.

Bevilacqua, Giuseppe, Alessandro Cresti, Giuseppe Grosso, Guido Menichetti, and Giuseppe Pastori Parravicini (2022). "Regimes and quantum bounds of nanoscale thermoelectrics with peaked transmission function". In: *Physica E: Low-dimensional Systems and Nanostructures* 138, p. 115105. ISSN: 1386-9477. DOI: https://doi.org/10.1016/j.physe.2021.115105. URL: https://www.sciencedirect.com/science/article/pii/S1386947721004550.

2021 Bevilacqua, G, V Biancalana, et al. (Mar. 2021). "Studying and applying magnetic dressing with a Bell and Bloom magnetometer". In: *Journal of Physics: Conference Series* 1859.1, p. 012018. ISSN: 1742-6596. DOI: 10.1088/1742-6596/1859/1/012018. URL: http://dx.doi.org/10.1088/1742-6596/1859/1/012018.

Bevilacqua, Giuseppe, Valerio Biancalana, Yordanka Dancheva, Alessandro Fregosi, Gaetano Napoli, et al. (Nov. 2021). "Electromagnetic induction imaging: signal detection based on tuned-dressed optical magnetometry". In: *Opt. Express* 29.23, pp. 37081–37090. DOI: 10.1364/OE.437930. URL: http://www.osapublishing.org/oe/abstract.cfm?URI=oe-29-23-37081.

Bevilacqua, Giuseppe, Valerio Biancalana, Yordanka Dancheva, Alessandro Fregosi, and Antonio Vigilante (Aug. 2021). "Spin dynamic response to a time dependent field". In: *Applied Physics B* 127.9, p. 128. ISSN: 1432-0649. DOI: 10.1007/s00340-021-07673-y. URL: https://doi.org/10.1007/s00340-021-07673-y.

Biancalana, Valerio, Roberto Cecchi, Piero Chessa, Marco Mandalà, et al. (Mar. 2021). "Validation of a Fast and Accurate Magnetic Tracker Operating in the Environmental Field". In: *Instruments* 5.1, p. 11. ISSN: 2410-390X. DOI: 10.3390/instruments5010011. URL: http://dx.doi.org/10.3390/instruments5010011.

Guarrera, V., R. Gartman, G. Bevilacqua, and W. Chalupczak (July 2021). "Spin-noise spectroscopy of a noise-squeezed atomic state". In: *Phys. Rev. Research* 3, p. L032015. DOI: 10.1103/PhysRevResearch.3.L032015. URL: https://link.aps.org/doi/10.1103/PhysRevResearch.3.L032015.

2020 Bevilacqua, Giuseppe, Valerio Biancalana, Marco Consumi, et al. (2020). "Ferromagnetic contamination of ultra-low-field-NMR sample containers. Quantification of the problem and possible solutions". In: *Journal of Magnetism and Magnetic Materials* 514, p. 167220. ISSN: 0304-8853. DOI: https://doi.org/10.1016/j.jmmm.2020.167220. URL: http://www.sciencedirect.com/science/article/pii/S0304885320315651.

Bevilacqua, Giuseppe, Valerio Biancalana, Antonio Vigilante, et al. (Aug. 2020). "Harmonic Fine Tuning and Triaxial Spatial Anisotropy of Dressed Atomic Spins". In: *Phys. Rev. Lett.* 125, p. 093203. DOI: 10.1103/PhysRevLett.125.093203. URL: https://link.aps.org/doi/10.1103/PhysRevLett.125.093203.

Biancalana, Valerio, Roberto Cecchi, Piero Chessa, Giuseppe Bevilacqua, et al. (Dec. 2020). "Fast, Cheap, and Scalable Magnetic Tracker with an Array of Magnetoresistors". In: *Instruments* 5.1, p. 3. ISSN: 2410-390X. DOI: 10.3390/instruments5010003. URL: http://dx.doi.org/10.3390/instruments5010003.

2019 Bevilacqua, Giuseppe, Valerio Biancalana, Yordanka Dancheva, Leonardo Stiaccini, et al. (Sept. 2019). "Spurious ferromagnetic remanence detected by hybrid magnetometer". In: *Review of Scientific Instruments* 90, p. 046106. DOI: https://doi.org/10.1063/1.5094623. URL: https://doi.org/10.1063/1.5094623.

Bevilacqua, Giuseppe, Valerio Biancalana, Yordanka Dancheva, and Antonio Vigilante (Feb. 2019a). "Restoring Narrow Linewidth to a Gradient-Broadened Magnetic Resonance by Inhomogeneous Dressing". In: *Phys. Rev. Applied* 11, p. 024049. DOI: 10.1103/PhysRevApplied.11.024049. URL: https://link.aps.org/doi/10.1103/PhysRevApplied.11.024049.

Bevilacqua, Giuseppe, Valerio Biancalana, Yordanka Dancheva, and Antonio Vigilante (Jan. 2019b). "Self-Adaptive Loop for External-Disturbance Reduction in a Differential Measurement Setup". In: *Phys. Rev. Applied* 11, p. 014029. DOI: 10.1103/PhysRevApplied.11.014029. URL: https://link.aps.org/doi/10.1103/PhysRevApplied.11.014029.

Bevilacqua, Giuseppe, Valerio Biancalana, Yordanka Dancheva, and Antonio Vigilante (Oct. 2019c). "Sub-millimetric ultra-low-field MRI detected in situ by a dressed atomic magnetometer". In: *Applied Physics Letters* 115.17, p. 174102. DOI: 10.1063/1.5123653. URL: https://doi.org/10.1063/1.5123653.

Guarrera, V., R. Gartman, G. Bevilacqua, G. Barontini, et al. (July 2019). "Parametric Amplification and Noise Squeezing in Room Temperature Atomic Vapors". In: *Phys. Rev. Lett.* 123, p. 033601. DOI: 10.1103/PhysRevLett.123.033601. URL: https://link.aps.org/doi/10.1103/PhysRevLett.123.033601.

Madeo, Dario et al. (Oct. 2019). "A physical model for the characterization of magnetic hydrogels subject to external magnetic fields". In: *Journal of Magnetism and Magnetic Materials* 493, p. 165674. ISSN: 0304-8853. DOI: https://doi.org/10.1016/j.jmmm.2019.165674. URL: http://www.sciencedirect.com/science/article/pii/S0304885319305037.

2018 Gartman, R. et al. (Dec. 2018). "Linear and nonlinear coherent coupling in a Bell-Bloom magnetometer". In: *Phys. Rev. A* 98, p. 061401. DOI: 10.1103/PhysRevA.98.061401. URL: https://link.aps.org/doi/10.1103/PhysRevA.98.061401.

2017 Bevilacqua, Giuseppe, Valerio Biancalana, Yordanka Dancheva, Antonio Vigilante, et al. (2017). "Simultaneous Detection of H and D NMR Signals in a Micro-Tesla Field". In: *The Journal of Physical Chemistry Letters* 8.24. PMID: 29211488, pp. 6176–6179. DOI: 10.1021/acs.jpclett.7b02854. eprint: http://dx.doi.org/10.1021/acs.jpclett.7b02854. URL: http://dx.doi.org/10.1021/acs.jpclett.7b02854.

Biancalana, Valerio, Giuseppe Bevilacqua, et al. (2017). "A low noise modular current source for stable magnetic field control". In: *Review of Scientific Instruments* 88.3, p. 035107. DOI: 10.1063/1.4977931. URL: https://doi.org/10.1063/1.4977931.

2016 Bevilacqua, G., V. Biancalana, and Y. Dancheva (July 2016). "Atomic orientation driven by broadly-frequency-modulated radiation: Theory and experiment". In: *Phys. Rev. A* 94, p. 012501. DOI: 10.1103/PhysRevA.94.012501. URL: http://link.aps.org/doi/10.1103/PhysRevA.94.012501.

Bevilacqua, G., G. Grosso, et al. (Dec. 2016). "Thermoelectric efficiency of nanoscale devices in the linear regime". In: *Phys. Rev. B* 94, p. 245419. DOI: 10.1103/PhysRevB.94.245419. URL: http://link.aps.org/doi/10.1103/PhysRevB.94.245419.

Bevilacqua, Giuseppe, Valerio Biancalana, Andrei Ben-Amar Baranga, et al. (2016). "Microtesla NMR J-coupling spectroscopy with an unshielded atomic magnetometer". In: *Journal of Magnetic Resonance* 263, pp. 65–70. ISSN: 1090-7807. DOI: https://doi.org/10.1016/j.jmr.2015.12.018. URL: http://www.sciencedirect.com/science/article/pii/S1090780715003195.

Bevilacqua, Giuseppe, Valerio Biancalana, Piero Chessa, et al. (Mar. 2016). "Multichannel optical atomic magnetometer operating in unshielded environment". In: *Applied Physics B* 122.4, pp. 1–9. ISSN: 1432-0649. DOI: 10.1007/s00340-016-6375-2. URL: http://dx.doi.org/10.1007/s00340-016-6375-2.

Bevilacqua, Giuseppe, Menichetti, Guido, and Parravicini, Giuseppe Pastori (2016). "Hilbert transform evaluation for electron-phonon self-energies". In: *Eur. Phys. J. B* 89.1, p. 3. DOI: 10.1140/epjb/e2015-60730-0. URL: http://dx.doi.org/10.1140/epjb/e2015-60730-0.

2014 Bevilacqua, G. and E. Breschi (June 2014). "Magneto-optic spectroscopy with linearly polarized modulated light: Theory and experiment". In: *Phys. Rev. A* 89, p. 062507. DOI: 10.1103/PhysRevA.89.062507. URL: http://link.aps.org/doi/10.1103/PhysRevA.89.062507.

Bevilacqua, G., E. Breschi, and A. Weis (Mar. 2014). "Steady-state solutions for atomic multipole moments in an arbitrarily oriented static magnetic field". In: *Phys. Rev. A* 89, p. 033406. DOI: 10.1103/PhysRevA.89.033406. URL: http://link.aps.org/doi/10.1103/PhysRevA.89.033406.

2013 Alderighi, M. et al. (2013). "A room-temperature alternating current susceptometer – Data analysis, calibration, and test". In: *Review of Scientific Instruments* 84.12, 125105, pp. -. DOI: http://dx.doi.org/10.1063/1.4842255. URL: http://scitation.aip.org/content/aip/journal/rsi/84/12/10.1063/1.4842255.

Bevilacqua, G., V. Biancalana, Y. Dancheva, and L. Moi (2013). "Chapter Three - Optical Atomic Magnetometry for Ultra-Low-Field NMR Detection". In: ed. by Graham A. Webb. Vol. 78. Annual Reports on NMR Spectroscopy. Academic Press, pp. 103–148. DOI: 10.1016/B978-0-12-404716-7.00003-1. URL: http://www.sciencedirect.com/science/article/pii/B9780124047167000031.

Bevilacqua, G. and F. Renzoni (Sept. 2013). "Quantum-state transfer between tripod atoms over a dark fiber". In: *Phys. Rev. A* 88, p. 033817. DOI: 10.1103/PhysRevA.88.033817. URL: http://link.aps.org/doi/10.1103/PhysRevA.88.033817.

Bevilacqua, G., G. Schaller, et al. (July 2013). "Implementation of stimulated Raman adiabatic passage in degenerate systems by dimensionality reduction". In: *Phys. Rev. A* 88, p. 013404. DOI: 10.1103/PhysRevA.88.013404. URL: http://link.aps.org/doi/10.1103/PhysRevA.88.013404.

Martinelli, Liana, Giuseppe Bevilacqua, and Eugenio E. Vogel (2013). "Optical Properties of 3d-Ions in Crystals". In: ed. by Nicolae M. Avram and Mikhail G. Brik. Springer. Chap. Dynamic Jahn-Teller effect in crystals doped with 3d ions. ISBN: 978-3-642-30837-6. URL: http://www.springer.com/physics/optics+%5C%26+lasers/book/978-3-642-30837-6.

2012 Bevilacqua, G., V. Biancalana, Y. Dancheva, and L. Moi (Apr. 2012). "Larmor frequency dressing by a nonharmonic transverse magnetic field". In: *Phys. Rev. A* 85, p. 042510. DOI: 10.1103/PhysRevA.85.042510. URL: http://link.aps.org/doi/10.1103/PhysRevA.85.042510.

Bevilacqua, Giuseppe and Gaetano Napoli (2012). "Parity of the weak Freedericksz transition". English. In: *The European Physical Journal E* 35, p. 133. ISSN: 1292-8941. DOI: 10.1140/epje/i2012-12133-7. URL: http://dx.doi.org/10.1140/epje/i2012-12133-7.

2011 Bevilacqua, G., V. Biancalana, Y. Dancheva, T. Mansour, et al. (2011). "A new class of sum rules for products of Bessel functions". In: *Journal of Mathematical Physics* 52, p. 033508. DOI: 10.1063/1.3567410.

Khanbekyan1, K. et al. (2011). "A phenomenological model for collisional coherence transfer in an optically pumped atomic system". In: *J. Phys. B: At. Mol. Phys.* 44, 055502 (7pp). DOI: 10.1088/0953-4075/44/5/055502. URL: http://stacks.iop.org/0953-4075/44/i=5/a=055502.

2010 Belfi, J., G. Bevilacqua, V. Biancalana, R. Cecchi, et al. (2010). "Stray magnetic field compensation with a scalar atomic magnetometer". In: *Review of Scientific Instruments* 81, p. 065103. DOI: 10.1063/1.3441980.

Bevilacqua, Giuseppe and Gaetano Napoli (Mar. 2010). "Periodic splay-twist Fréedericksz transition for nematics confined between two concentric cylinders". In: *Phys. Rev. E* 81, p. 031707. DOI: 10.1103/PhysRevE.81.031707. URL: http://link.aps.org/doi/10.1103/PhysRevE.81.031707.

2009 Belfi, J., G. Bevilacqua, V. Biancalana, S. Cartaleva, Y. Dancheva, K. Khanbekyan, et al. (2009). "Dual channel self-oscillating optical magnetometer". In: *J. Opt. Soc. Am. B* 26.5, pp. 910–916. DOI: http://dx.doi.org/10.1364/JOSAB.26.000910.

Bevilacqua, G., V. Biancalana, Y. Dancheva, and L. Moi (2009). "All-optical magnetometry for NMR detection in a micro-Tesla field and unshielded environment". In: *Journal of Magnetic Resonance* 201, pp. 222–229. DOI: http://dx.doi.org/10.1016/j.jmr.2009.09.013.

2008 Ippolito, D., L. Martinelli, and G Bevilacqua (2008). "Cooperative Jahn-Teller effects in PrO_2". In: *J. Phys.: Condens. Matter* 20, 175218 (8pp). DOI: 10.1088/0953-8984/20/17/175218. URL: http://stacks.iop.org/JPhysCM/20/175218.

2007 Belfi, J., G. Bevilacqua, V. Biancalana, S. Cartaleva, Y. Dancheva, and L. Moi (2007). "Cesium coherent population trapping magnetometer for cardiosignal detection in an unshielded environment". In: *J. Opt. Soc. Am. B* 24.9, pp. 2357–2362. DOI: http://dx.doi.org/10.1364/JOSAB.24.002357.

Belfi, J., G. Bevilacqua, V. Biancalana, Y. Dancheva, et al. (2007). "All optical sensor for automated magnetometry based on coherent population trapping". In: *J. Opt. Soc. Am. B* 24.7, pp. 1482–1489. DOI: http://dx.doi.org/10.1364/JOSAB.24.001482.

2006 Bevilacqua, G., V. Biancalana, Y. Dancheva, B. Grishanin, et al. (2006). "Computer Modeling of Frequency-modulation spectra of coherent dark resonances". In: *Laser Physics Letters* 3, p. 427. DOI: 10.1002/lapl.200610036.

Marinelli, C. et al. (2006). "Desorption of Rb and Cs from PDMS induced by non resonant light scattering". In: *Eur. Phys. J. D* 37, pp. 319–325. DOI: http://dx.doi.org/10.1140/epjd/e2005-00316-1.

Vladimirova, Yu.V. et al. (2006). "Theory of frequency modulation spectroscopy of coherent dark resonances". English. In: *Journal of Experimental and Theoretical Physics* 103.4, pp. 528–538. ISSN: 1063-7761. DOI: 10.1134/S1063776106100037. URL: http://dx.doi.org/10.1134/S1063776106100037.

2005 Bevilacqua, G., V. Biancalana, E. Breschi, et al. (2005). "Coherent Population Trapping Spectra in Presence of ac Magnetic Fields". In: *Phys. Rev. Lett.* 95, 123601 (4pp). DOI: http://dx.doi.org/10.1103/PhysRevLett.95.123601.

Bevilacqua, G. and G. Napoli (2005). "Reexamination of the Helfrich-Hurault effect in smectic-A liquid crystals". In: *Phys. Rev. E* 72, 041708 (5pp). DOI: 10.1103/PhysRevE.72.041708. URL: http://link.aps.org/doi/10.1103/PhysRevE.72.041708.

Bevilacqua, Giuseppe and Gaetano Napoli (2005). "The Slight Distortions Induced by an Electrostatic Field on Finite Samp les of Smectic-A Liquid Crystals". In: *Molecular Crystals and Liquid Crystals* 436.1, 127/[1081]–136/[1090]. DOI: 10.1080/15421400590956630. eprint: http://www.tandfonline.com/doi/pdf/10.1080/15421400590956630. URL: http://www.tandfonline.com/doi/abs/10.1080/15421400590956630.

Burchianti, A et al. (2005). "Light-induced atomic desorption from PDMS films and porous glass: appli cation and fundamental issues". In: *Journal of Physics: Conference Series* 19.1, p. 78. DOI: 10.1088/1742-6596/19/1/013. URL: http://stacks.iop.org/1742-6596/19/i=1/a=013.

Ippolito, D., L. Martinelli, and G. Bevilacqua (2005). "Dynamical Jahn-Teller effect on UO_2". In: *Phys. Rev. B* 71, 064419 (6pp). DOI: 10.1103/PhysRevB.71.064419. URL: http://link.aps.org/doi/10.1103/PhysRevB.71.064419.

2004 Bevilacqua, G., D. Ippolito, and L. Martinelli (2004). "Jahn-Teller effect on PrO_2: a multimode vibronic model". In: *Phys. Rev. B* 69, 155208 (6 pp). DOI: 10.1103/PhysRevB.69.155208. URL: http://link.aps.org/doi/10.1103/PhysRevB.69.155208.

Bevilacqua, G., L. Martinelli, E.E. Vogel, et al. (2004). "Jahn-Teller effect in the emission and absorption spectra of ZnS:Cr^{2+} and ZnSe:Cr^{2+}". In: *Phys. Rev. B* 70, 075206 (7pp). DOI: 10.1103/PhysRevB.70.075206. URL: http://link.aps.org/doi/10.1103/PhysRevB.70.075206.

2003 Andreeva, Ch. et al. (2003). "Two-color coherent population trapping in a single Cs hyperfine transition, with application in magnetometry". In: *Appl. Phys. B* 76, pp. 667–675. DOI: http://dx.doi.org/10.1007/s00340-003-1163-1.

Bevilacqua, Giuseppe, Liana Martinelli, and Giuseppe Pastori Parravicini (2003). "Renner-Teller interaction matrices and Green's functions formalism". In: Advances in Quantum Chemistry 44, pp. 45–57. ISSN: 0065-3276. DOI: https://doi.org/10.1016/S0065-3276(03)44004-5. URL: https://www.sciencedirect.com/science/article/pii/S0065327603440045.

2002 Bevilacqua, G., L. Martinelli, and E. E. Vogel (2002). "Jahn-Teller effect and the luminescence spectra of V^{2+} in ZnS and ZnSe". In: *Phys. Rev. B* 66, 155338 (5pp). DOI: 10.1103/PhysRevB.66.155338. URL: http://link.aps.org/doi/10.1103/PhysRevB.66.155338.

Martinelli, L., G. Bevilacqua, E.E. Vogel, et al. (2002). "Hot lines in the infrared absorption spectra of Fe^{2+} in III-V compounds". In: *Phys. Rev. B* 65, 155203 (5pp). DOI: 10.1103/PhysRevB.65.155203. URL: http://link.aps.org/doi/10.1103/PhysRevB.65.155203.

2001 Bevilacqua, G., L. Martinelli, and G. Pastori Parravicini (2001). "Effect of a magnetic field on a $E \otimes \epsilon$ Jahn-Teller system: Berry phase and optical properties". In: *Phys. Rev. B* 63, 132403 (4pp). DOI: 10.1103/PhysRevB.63.132403. URL: http://link.aps.org/doi/10.1103/PhysRevB.63.132403.

Mualin, O. et al. (2001). "Two-modes Jahn-Teller effect in the absorption spectra of Fe^{2+} in II-VI and III-V compounds". In: *Phys. Rev. B* 65, 035211 (9pp). DOI: 10.1103/PhysRevB.65.035211. URL: http://link.aps.org/doi/10.1103/PhysRevB.65.035211.

2000 Martinelli, L., G. Bevilacqua, J. Rivera-Iratchet, et al. (2000). "Three independent methods for intermediate Jahn-Teller coupling". In: *Phys. Rev. B* 62, pp. 10873–10881. DOI: 10.1103/PhysRevB.62.10873. URL: http://link.aps.org/doi/10.1103/PhysRevB.62.10873.

1998 Bevilacqua, G, L Martinelli, and G Pastori Parravicini (Nov. 1998). "Role of the breathing mode in a strongly coupled Jahn-Teller system". In: *Journal of Physics: Condensed Matter* 10.45, pp. 10347–10355. DOI: 10.1088/0953-8984/10/45/020. URL: https://doi.org/10.1088/0953-8984/10/45/020.

Bevilacqua, G., L. Martinelli, and G. Pastori Parravicini (1998). "Lanczos and modified Lanczos procedures for the Jahn-Teller systems". In: *Revista Mexicana de Fisica* 44.Suplemento 1, pp. 15–28.

Rivera-Iratchet, J. et al. (1998). "Comparison between the methods of Glauber and Lanczos applied to the Jahn-Teller effect in ZnSe:Fe^{2+}". In: *Revista Mexicana de Fisica* 44.Suplemento 1, pp. 66–69.

1996 Bevilacqua, G., L. Martinelli, and G. Pastori Parravicini (1996). "Jahn-Teller effect in $ZnS : Fe^{2+}$ revisited with a modified Lanczos-type algorithm". In: *Phys. Rev. B* 54, pp. 7626–7629. DOI: 10.1103/PhysRevB.54.7626. URL: http://link.aps.org/doi/10.1103/PhysRevB.54.7626.