CURRICULUM VITAE

UNIVERSITY LECTURER DR. BORIS CHESCA
Department of Physics
Loughborough University,
Leicestershire, UK

PERSONAL DATA

Surname: CHESCA
First name: BORIS
Nationality: German
Date of birth (Year-Month-Day): 1966-March-13
Place of birth: Bucharest, Romania
Sex: Male
Marital status: married
Children: two

Private Address
Dr. Boris Chesca
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EDUCATION AND AWARDS

- **University Lecturer Degree (Habilitation)**, June 2004 (postdoctoral qualification for teaching; the highest academic examination in Germany)
  University of Tuebingen, Experimetalphysik II-Solid State Physics, Germany;
  Subject: High-T_c cuprates: phase-sensitive tests of the pairing symmetry and influence of large thermal fluctuations on SQUIDs.
- **Postdoctoral Humboldt Fellow**, Forschungszentrum Juelich, Germany, 1996-1998
- **Doctor of Philosophy** (Ph.D.) in Physics and Mathematics, 1995
  Frank Lab. of Neutron Physics, Joint Institute for Nuclear Research, Dubna, Russia;
  Subject: Superconducting quantum interference devices: non-linear physics and sensitive magnetic sensors.
- **Master of Science** (M.Sc.) in Physics, 1991
  University of Physics and Technological Physics, Bucharest, Romania;
  Subject: Ultrasound sensors for non-destructive evaluation.

EMPLOYMENT HISTORY

February 2006-present
Lecturer
Status: full time job; open ended contract
Short Description:

1. **EXPERIMENTAL RESEARCH:**
   High–T_c superconductors thin films; SQUIDs and Josephson junctions
   a) ***Thin film deposition***

b) ***Thin film characterization***: resistivity versus temperature, X-ray diffraction; susceptibility measurements; flux-flow resistivity measurements; doping effects.
c) ***SQUIDs and Josephson junctions: fabrication, characterization and optimization***
d) ***Measurements***
Low Temperature electric transport measurements
Phase-sensitive measurements
Nb-SQUIDs: fabrication, characterization and investigation of non-linear behavior
The physics of Josephson effect and Andreev reflection and applications.

Quantum computation

2. **THEORETICAL RESEARCH:**
   a) Numerical and analytical methods for calculating quasiparticle spectra in tunnel junctions and finite transparency junctions, as well as superconductor surface density of states; Critical currents vs. magnetic field characteristics and current-voltage curves of Josephson junctions and SQUIDs.
   b) Investigation of superconducting qubits dynamics and output performances of very low noise qubits-read-out schemes.
   c) Analytical methods (based on Fokker-Planck formalism, Thermally Activated Model, etc.) and numerical simulations (of Langevin eqs., Sine-Gordon eqs.) for analysing various devices containing Josephson junctions operating in the presence of thermal fluctuations in the dc, rf (radio frequency), uhf (ultra high frequency) or microwaves ranges and used in phase-sensitive experiments, as sensitive magnetic sensors, or for quantum computation.
3. **SUPERVISING STUDENTS, PH.D. STUDENTS, OR POST-DOCS** working in the field of Josephson effect and Andreev reflection: sample fabrication, characterization, applications.
4. **TEACHING DUTIES**
   Currently Teaching three modules
   Winter Semester
   Electricity and Magnetism (first year Undergraduate Students).
   Solid State Physics (second year Undergraduate Students).
   Summer Semester
   Electrical Transport Measurements Laboratory (second year Undergraduate Students).

September 2000 – February 2006
Assistant Professor (C1)
University of Tuebingen, Institute of Physics, Solid State Physics, Tuebingen Germany (the group of *Prof. Reinhold Kleiner*).

February 2000 - August 2000
Postdoctoral position (Wissenschaftlicher Angestellter)
University of Tuebingen, Institute of Physics, Experimentalphysik II – Festkörperphysik , Tuebingen Germany.

November 1998 - January 2000
Postdoctoral position (Wissenschaftlicher Angestellter)
University of Augsburg, Institute of Physics, Experimentalphysik VI, Augsburg, Germany (the group of *Prof. Jochen Mannhart*).

July 1998-September 1998
European Fellowship within the frame of my **Postoctoral Humboldt Fellowship**

Åbo Akademi, Department of Physics, Porthansgatan 3, FIN-20500 Turku, Finland (the group of *Prof. Juhani Kurkijarvi*).

September 1996 - October 1998
Postdoctoral Humboldt Fellow
Forschungszentrum Juelich, ISI, D-52425, Juelich, Germany (the group of *Prof. Alex Braginski*).

August 1995 - August 1996
Postdoctoral Researcher
Frank Lab. of Neutron Physics, Joint Institute for Nuclear Research, Dubna, Russia.

October 1992 - July 1995
Ph.D. Researcher
Frank Lab. of Neutron Physics, Joint Institute for Nuclear Research, Dubna, Russia.

September 1991 - September 1997
Scientific Researcher
Institute of Atomic Physics, IFIN, Magurele, Bucharest, Romania.

PROFESSIONAL AFFILIATIONS

- Permanent member of the Alexander von Humboldt Society since 1996;
- Member of the German Physical Society since 2000;

PATENTS

1. Title of invention: INSQUID

Contributors: John Clarke, Antonio Garcia-Martinez, Britton Plourde, Paul Reichardt, Tim Robertson, Boris Chesca, Reinhold Kleiner.

Issued by **Lawrence Berkeley Laboratory, US:** contract No. DE-AC03-76SF00098 between the U.S. Department of Energy and the University of California.

2. Title of invention: Shapiro Steps SQUID

Inventor: Boris Chesca

Application number DE9902720; Publication date 16 March 2000; States: US, EU.

RESEARCH COLLABORATIONS AND GRANTS

Cooperation with other scientists (Germany)

a) Dr. T. Dahm and Prof. N. Schopohl, Institute for Theoretical Physics, University of Tuebingen;
b) Prof. Bernhard Keimer , Dr. C. Bernhard and Dr. C.T. Lin from the Max Planck Institute for Solid State Research, Stuttgart.
c) Prof. J. Mannhart, Dr. C. Schneider, Experimentalphysik VI Universität Augsburg;
d) Dr. Y. Makhlin, Prof. A. Shnirman, Prof. G. Schön, University of Karlsruhe.

Cooperation with other scientists (international)

a) Dr. A. Tsukada, Prof. M. Naito, NTT Laboratories, Japan.
b) Prof. H. Hilgenkamp, University of Twente, Enschede, The Netherlands,
c) Prof. C. Tsuei, and Prof. J. Kirtley, IBM T.J. Watson, Research Center Yorktown Heights;

d) Prof. John Clarke, Physics Department, University of California, Berkeley;

Grants

a) 2001- 2002: my own grant "*Investigation of the order parameter symmetry in high transition temperature superconductors by studying critical current state and self-induced dc current resonances of SDJ dc π-SQUIDs* " (Tuebingen University grant "Strukturfonds");
b) 2000-2002: BMBF project 13N6918 (German project; co-member);
c) 2001-2004 ESF PiShift program (European project; co-member);
d) 2003-2004 Landesforschungsschwerpunktsprogramm Baden-Württemberg (German grant, co-member).
e) 2005-2013 SFB project – project C2: *"Bose Einstein Condensates in Superconductive microtraps"* (German project, co-member).
f) 2012-2015 Investigation of Infinite Layer SLCO unconventional superconductor, (European Project, co-member)
Total money: Eur 348 837.
g) 2012-2014, Principal Investigator in an EPSRC First Grant Application: *"Unconventional superconductor junctions: from fundamentals to application."*
Total money £ 500000.
Status: submitted; EPSRC response expected in 2012

SCIENTIFIC PRESENTATIONS

TALKS PRESENTED AT CONFERENCES

A) **Invited Speaker**

1. May 2005, **Workshop on High Temperature Superconductivity**, Tel Aviv University, Israel, *Phase sensitive experiments with cuprate superconductors based on the Josephson effect and Andreev bound states.*
2. March 2005, **German Physical Society (DPG) Spring Meeting**, Berlin, Germany: *Phase sensitive experiments with high-T_c superconductors based on the Josephson effect and Andreev bound states.*
3. June 2003, **Pi-shift meeting**: Josephson junctions. Basic studies and novel applications, Jena, Germany, *Phase sensitive experiments of the order parameter symmetry in electron-doped superconductors*.
4. April 2003, **German-Israeli Meeting**: High Temperature Superconductivity: from Fundamentals to Applications, Blaubeuren, Germany, *Phase-sensitive tests of pairing symmetry.*
5. October 2000, **13 Symposium on Superconductivity**, October 2000, Tokyo, Japan, *Order parameter phase sensitive experiments and SDJ dc SQUIDs*.
6. September 1998, Applied Superconductivity Conference, **ASC'98**, Palm Desert, California, USA, *The effect of thermal fluctuations on the operation of DC SQUIDs at 77 K - a fundamental analytical approach*.
7. December 1998, **Workshop on SQUIDs**, Cambridge, United Kingdom, Chairman: Prof. Dr. John Clarke., *Microwave irradiated dc SQUIDs: theory and experiments*.
8. June 1997, 6th International Superconducting Electronics Conference, **ISEC'9***7*, Berlin, Germany, *Theory of RF SQUIDS operating at 77 K.*

B) **Contributed Speaker**

1. June, 2012, European Conference on Nanofilms (ECNF 2), Ancona, Italy, Josephson junctions made of YBCO superconducting nano-films.
2. August 2010, **Workshop on Principles and Design of Strongly Correlated Electron Systems,** Trieste, Italy, Electric Transport Properties of YBCO/Nb hybrids.
3. July 2010, **World Congress on Engineering**, 2010, London, UK, *YBCO/Nb Josephson Junctions for Superconducting Electronics.*
4. July 2006, **Plasma Conference** London, UK, *Josephson and quasiparticle phase sensitive tunneling in Nb-YBCO junctions*.
5. September 2005, **Workshop on Weak-superconductivity**, Bratislava, Slovakia, *Phase sensitive experiments with cuprate superconductors based on the Josephson effect and Andreev bound states.*
6. June, 2005, **Interfaces in oxide thin films structures**, St. Margherita, Italy, *Phase sensitive experiments with cuprate superconductors based on the Josephson effect and Andreev bound states.*
7. May 2003, **M^2S HTSC Meeting**, Rio de Janeiro, Brazil, *Phase sensitive evidence for a predominant d-wave pairing symmetry in the electron doped superconductor LaCeCuO.*
8. May 2003, **International Conference on Unconventional Superconductivity**, Campinas, Brazil, *Predominant d-wave pairing symmetry in the electron doped superconductor LaCeCuO.*
9. March 2003, **German Physical Society** (DFG) conference, Dresden, Germany, *Josephson effect-based test in favor of a predominant d-wave pairing symmetry in the electron doped superconductor LaCeCuO.*
10. March 2002, **German Physical Society** (DFG) conference, Regensburg, Germany; *Progress in performing a Josephson effect-based test of the pairing symmetry in the electron-doped superconductor LaCeCuO.*
11. September 2001, **SQUID'2001,** Götheborg, Sweden, *Spatially Distributed Junction dc π-SQUIDs and phase sensitive experiments.*
12. April 2000, **HTS Workshop on Superconducting Electronics**, Twente, The Netherlands, *Electronic behavior of SDJ small inductance dc π-SQUIDs.*
13. June 1999, International Conference on Superconducting Electronics, **ISEC'99**, San Francisco, USA, *Shapiro-step SQUIDs – Theory and Experiments.*
14. June 1998, **HTS Workshop on Superconducting Electronics**, Twente, The Netherlands, *Theory of dc SQUIDs operating under the influence of large thermal fluctuations.*
15. June 1996, **Weak Superconductivity Symposium**, Smolenice, Slovenia, *Output signal and noise characteristics in RF pumped double SQUIDs.*
16. October 1994, **Conference on Nonlinear Superconducting Devices & High Tc Materials**, Capri, Italy, *Double SQUID behavior in superimposed rf and dc magnetic fields.*
17. October 1991, **National Conference of Physics**, Brasov, Romania, *On wave diffraction: An Electromagnetic/Ultrasound analogy.*

INVITED SEMINAR TALKS

1. October 2006, Birmingham University, Chairman, Dr. Mark Colclough, *Unconventional Superconductivity and Intuition*.
2. May 2005, St. Andrews University, Chairman: Prof. Andy Mackenzie, *Unconventional superconductivity and tunneling.*
3. February 2005, Max-Planck Institute, Stuttgart, Chairman: Prof. Dr. Bernhard Keimer, *Phase sensitive experiments with cuprates superconductors based on the Josephson effect and Andreev bound states.*

4. April 2002, Walther-Meissner-Institut, Garching, Chairman: Prof. Dr. Rudolf Gross, *Kinetic inductance junction model: theory and experiments.*
5. December 1998, Low Temperature Physics Department, Espoo, Helsinki, Finland, Chairman: Prof. Dr. Pertti Hakonen., *A D-SQUID as a macroscopic quantum object.*
6. June 1998, University of Augsburg, Augsburg, Germany, Chairman: Prof. Dr. Jochen Mannhart, *High transition temperature dc SQUIDs: theory and experiments.*
7. June 1998, University of Cologne, Cologne, Germany, Chairman: Prof. Dr. Rudolf Gross, Dc SQUIDs operating at large thermal fluctuations.
8. April, 1998, University of Erlangen, Erlangen, Germany, Chairman: Prof. Dr. K. Müller, The influence of large thermal fluctuation on the SQUIDs operation.

POSTER CONTRIBUTIONS TO CONFERENCES

1. September 2011, **EUCAS'2011**, The European Conference on Applied Superconductivity, The Hague, The Netherlands.
2. July 2011, **Fifth Stig Lundqvist Conference on the Advancing Frontiers of Condensed Matter Physics**, Trieste, Italy,
3. July 2009, **JAPMED'6**, The Japanese-Mediterranean Workshop on Applied Electromagnetic Engineering for Magnetic Superconducting and Nano Materials, Bucharest, Romania.
4. June 2009, **International Conference on Materials Characterization**, Southampton, UK.
5. August 2008, The 25 International Conference on Low Temperature Physics, **LT 25**, Amsterdam, The Netherlands.
6. June 2008, European Magnetic Sensors and Actuators, EMSA'08, Caen, France.
7. September 2007, The European Conference on Applied Superconductivity, **EUCAS'2007**, Brussels, Belgium.
8. June 2004, Spectroscopies in Novel Superconductors, Sitges, Spain.
9. September 2000, Applied Superconductivity Conference, **ASC'2000**,
10. August 1999, The 22 International Conference on Low Temperature Physics, **LT 22**, Helsinki, Finland.
11. March 1998, **German Physical Society Meeting** (DFG), Regensburg, Germany.
12. July 1997, The Third European Conference on Applied Superconductivity, **EUCAS'97**,University of Twente, The Netherlands.
13. June 1997 (Participant as a NATO Grant Winner) **NATO ASI on Applications of Superconductivity**, Loen, Norway.
14. August 1995, **Workshop on Superconductivity Phenomenology,** Trieste, Italy.
15. August 1996, The 21st International Conference on Low Temperature Physics, **LT21**, Prague, Ceh Republic.
16. June 1995 (Participant as a NATO Grant Winner) **NATO ASI on SQUID Sensors: Applications and Fundamentals**, Maratea, Italy.
17. September 1994, **XXX Conference on Low Temperature Physics**, Dubna, Russia.
18. July 1994, Forum on New Materials, **8th CIMTEC**, Florence, Italy.
19. September 1993 (Participant) **VI Trilateral German-Russian-Ukrainian Seminar on High Tc Superconductivity**, Dubna, Russia.
20. June 1992 (Participant) **Spring College on Superconductivity**, International Centre for Theoretical Physics, Trieste, Italy

LIST OF PUBLICATIONS

TOTAL NUMBER OF PUBLICATIONS IN REFEREED JOURNALS: 44

CONTRIBUTIONS TO BOOKS: 3

A) Articles in Journals

1. B. Chesca, S. E. Savel'ev, A. L. Rakhmanov, H. J. H. Smilde, and H. Hilgenkamp, Controlling Josephson dynamics by strong microwave fields, *Phys. Rev. B* **78**, 094505 (2008).
2. M. Wagenknecht, D. Koelle, R. Kleiner, S. Graser, N. Schopohl, B. Chesca, A. Tsukada, S. T. Goennenwein, and R. Gross, Phase Diagram of the Electron-Doped La2-xCexCuO4 Cuprate Superconductor from Andreev Bound States at Grain Boundary Junctions, *Phys. Rev. Lett.* **100**, 227001 (2008).
3. B. Chesca, H.J.H. Smilde, H. Hilgenkamp, Upper bound on the Andreev states induced second harmonic in the Josephson coupling of YBa2Cu3O7−δ/Nb junctions from experiment and numerical simulations, *Phys. Rev. B* **77**, 184510 (2008).
4. B. Chesca, D. Dönitz, T. Dahm, R. Huebener, D. Koelle, R. Kleiner, A. Ariando, H. Hilgenkamp, Observation of Andreev bound states in $YBa_2Cu_3O_{7-x}$ /Au/Nb ramp-type junctions, *Phys. Rev. B* **73**, 014529 *(2006)*.
5. B. Chesca, M. Seifried, T. Dahm, N. Schopohl, D. Koelle, R. Kleiner, A. Tsukada, Observation of Andreev bound states in bicrystal grain-boundary Josephson junctions of the electron doped superconductor $La_{2-x}Ce_xCuO_{4-y}$, *Phys. Rev. B* **71**, 104504 (2005).
6. B. Chesca, K.Ehrhardt, M. Mößle, R. Straub, D. Koelle, R. Kleiner, and A. Tsukada, Magnetic Field Dependence of the Maximum Supercurrent of $La_{2-x}Ce_xCuO_{4-y}$ Interferometers: Evidence for a Predominant $d_{x^2-y^2}$ Superconducting Order Parameter, *Phys. Rev. Lett.* **90**, 057004 (2003).
7. B. Chesca, R.R. Schulz, B.Goetz, C.W. Schneider, H. Hilgenkamp, and J. Mannhart , d-wave induced zero-field resonances in dc π-superconducting quantum interference devices, *Phys. Rev. Lett.* **88**, 177003 (2002).
8. John Clarke, T.L. Robertson, B.L.T. Plourde, A. García-Martinez, P.A. Reichardt, D.J. Van Harlingen, B. Chesca, R. Kleiner, Y. Makhlin, G. Schön, A. Shnirman, and F.K. Wilhelm, Quiet readout of superconducting flux states, *Physica Scripta* **102**, 173-177 (2002).
9. R.R. Schulz, B. Chesca, B. Goetz, C.W. Schneider, A. Schmehl, H. Bielefeldt, H. Hilgenkamp, J. Mannhart, and C.C.Tsuei, Design and Realization of an all d-wave dc π-SQUID, *App. Phys. Lett.* **76**, 912-914 (2000).
10. X. H. Zeng, Y. Zhang, B. Chesca, K. Barthel, Ya. S. Greenberg, and A. I. Braginski, Experimental study of amplitude-frequency characteristics of high-transition-temperature radio frequency superconducting quantum interference device, *J. Appl. Phys.* **88**, 6781-6787 (2000).
11. B. Chesca, Magnetic field dependencies of the critical current and of the resonant modes of dc SQUIDs fabricated from superconductors with $s+id_{x^2-y^2}$ order-parameter symmetries, *Annalen Phys.* (Leipzig) **8**, 511-522 (1999).
12. B. Chesca, The Effect of Thermal Noise on the I-V curves of high inductance dc SQUIDs in the presence of microwave radiation, *J. Low Temp. Phys.* **116**,167-186 (1999).
13. K. Barthel, D. Koelle, B. Chesca, A.I. Braginski, A. Marx, R. Gross, and R. Kleiner: Transfer function and thermal noise of YBCO dc SQUIDs operated under large thermal fluctuations, *Appl. Phys. Lett.*, **74**, 2209–2211 (1999).
14. B. Chesca, Analytical theory of DC SQUIDS operating in the presence of thermal fluctuations, *J. Low Temp. Phys.*, **112**, 165-196 (1998).
15. B. Chesca, Theory of RF SQUIDS operating in the presence of large thermal fluctuations, *J. Low Temp. Phys.*, **110**, 963-1002 (1998).

16. B. Chesca, A three-hole RF/UHF double SQUID as a natural second-order magnetic gradiometer, *Physica C* **273**, 233-238 (1997).
17. B. Chesca, Theory of a UHF pumped double SQUID, *Physica C* **270**, 1-20 (1996).
18. B. Chesca, A thermal-activation model for intrinsic noise in RF pumped double SQUID's, *Physica C* **256**, 261-282 (1996).
19. B. Chesca, On the theory of the rf pumped double SQUID, *Physica C* **241**, 123-136 (1995).
20. B. Chesca, On the Theoretical Study of an RF-SQUID Operation Taking into Account the Noise Influence, *J. Low Temp. Phys.*, **94**, 515-538 (1994).
21. B. Chesca, On the theory of the symmetrical double SQUID, *Physica C* **220**, 249-257 (1994).
22. B. Chesca, Radio frequency pumped SQUID theory in the presence of noise, *Preprint-JINR Dubna*-**P17-92-99**, 1-19 (1992, in Russian).
23. B. Chesca, On wave diffraction: An Electromagnetic/Ultrasound analogy, *Studii si Cercetari de Fizica***,** Bucharest, **44**, No.3, 201-222 (1992, in Romanian).

B) Published Contributions to Academic Conferences

1. B.Chesca, Double rf-SQUID operating in a non-adiabatic regime: a dream comes true?, European Conference on Applied Superconductivity, EUCAS 2011, The Hague, The Netherlands, 18 Sep 2011 - 23 Sep 2011. Physics Procedia. Elsevier B.V.. **36**: 377-381, (2012)
2. B. Chesca, H.J.H. Smilde, H. Hilgenkamp, Current-phase relation of YBCO/Nb unconventional superconductor junctions, Materials Science Forum, **670**, 38-41 (2010).
3. B. Chesca, H.J.H. Smilde, H. Hilgenkamp, YBCO/Nb Josephson Junctions for Superconducting Electronics, Proceedings of the World Congress on Engineering 2010, London UK, 853-855 (2010).
4. B. Chesca, Tunnelling measurements as a new method of investigation of thin film superconducting cuprate junctions, Proceedings of the Materials Characterisation IV: Computational Methods and Experiments, WIT *Transactions on Engineering Sciences* **64**, 293-305 (2009).
5. B. Chesca, SQUID-Based Investigation of D-Wave Superconductor Junctions, Proceedings of the European Magnetic Sensors and Actuators Conference (EMSA'08) *Sensor Lett.* **7**, 263–265 (2009).
6. B. Chesca, H.J.H. Smilde, H. Hilgenkamp, Josephson coupling in untwinned $YBa_2Cu_3O_{7-x}$/Nb d-wave junctions, *J. Phys.: Conf. Ser.* **97** 012095 (2008).
7. B. Chesca, K.Ehrhardt, M. Mößle, R. Straub, D. Koelle, R. Kleiner, A. Tsukada, Phase-sensitive evidence for a predominant d-wave pairing symmetry in the electron doped superconductor $La_{2-x}Ce_xCuO_{4-y}$, Proceedings of the **M^{2}S HTSC Meeting**, Rio de Janeiro, Brazil; *Physica C* **408-410,** 321-323 (2004).
8. R.R. Schulz, B. Chesca, B. Goetz, C.W. Schneider, A. Schmehl, H. Bielefeldt, H. Hilgenkamp, J. Mannhart, and C.C.Tsuei, Design and Realization of an all d-wave dc π-SQUID, *Proceedings of the International Symposium on High Critical Temperature Superconductors Devices*, Naples (Italy), eds. A. Barone, F. Tafuri, 25-31 (2002).
9. B. Chesca and R. Kleiner, Electronic behavior of SDJ small inductance dc π-SQUIDs, Proceedings of 6th Twente Workshop on Superconductivity, *Physica C* **350**, 180-186 (2001).
10. B. Chesca and R. Kleiner, Order parameter phase sensitive experiments and SDJ dc SQUIDs, Proceedings of the 13 International Symposium on Superconductivity, Tokyo, *Physica C***, 357-0**, 1561-1566 (2001).

11. B. Goetz, R. R. Schulz, C. W. Schneider, B. Chesca,, A. Schmehl, H. Bielefeldt, H. Hilgenkamp, J. Mannhart, Enhancement of Grain Boundary J_c by doping and realization of a High-T_c Thin Film dc π-SQUIDs, *Proc. 4th EUCAS'1999* Sitges (Spain), Inst. Phys. Conf. Ser. No. **167**, 2000 IOP Publishing Ltd., 343-346 (2000).
12. H. Hilgenkamp, B. Goetz, R. R. Schulz, C. W. Schneider, B. Chesca,, G. Hammerl, A. Schmehl, H. Bielefeldt, J. Mannhart, Understanding and Adjusting Grain Boundary Transport Properties in High–T_c superconductors, *Proceedings of the 2000 International Workshop on Superconductivity*, Shimane (Japan), 33-36 (2000).
13. R. R. Schulz, B. Chesca, B. Goetz, C. W. Schneider, A. Schmehl, H. Bielefeldt, H. Hilgenkamp, J. Mannhart and C. C. Tsuei, Realization of High-T_c dc π-SQUIDs, *Physica C* **341-348**, 1651-1654 (2000).
14. B. Chesca, Magnetic field dependencies of the critical current and of the resonant modes of dc SQUIDs fabricated from a 0 and a π Josephson junction in parallel, Proceedings of the 22nd International Conference on Low Temperature Physics, LT22, July 1999, Helsinki, Finland, *Physica B* **284-288**, 2124-2126 (2000).
15. B. Chesca, The effect of thermal fluctuations on the operation of DC SQUIDs at 77 K - a fundamental analytical approach, Proceedings ASC 1998, Palm Spring Desert California, USA, *IEEE Trans. Appl. Supercond.*, **9**, 2955-2960 (1999).
16. B. Chesca, Theory of RF SQUIDS operating at 77 K, Proceedings of the 6th International Superconducting Electronics Conference ISEC'97, June 1997, Berlin, Germany, *Appl. Superconductivity* **6**, 829-835 (1999).
16. B. Chesca, A D-SQUID as a possible solution for approaching the classical sensitivity limit, in Proceedings of the 3rd European Conference on Applied Superconductivity, **EUCAS '97**, July 1997, Univ. of Twente, the Netherlands, *Appl. Superconductivity* eds. H. Rogalla and D.H.A.Blank (Institute of Physics Publishing, Bristol and Philadelphia), 671-674 (1998).
17. B. Chesca, Output signal and noise characteristics in RF pumped double SQUIDs, in Proceedings of the International Weak Superconductivity Symposium, July 1996, Smolenice, Slovak Republic, *J. Low Temp. Phys.*, **106**, 509-514 (1997).
18. B. Chesca, Statics, dynamics, signal and noise properties of RF pumped double SQUIDs, in Proceedings of the 21st International Conference on Low Temperature Physics, **LT21**, August 1996, Praha, Ceh Republic, *Czechoslovak Journal of Physics* **46**, 2813-2814 (1996).
19. B. Chesca, Theoretical study of an RF-SQUID taking into account the noise influence, in Proceedings of the 8th CIMTEC, July 1994, Florence, Italy, *Advances in Science and Technology* **8**, *Superconductivity and Superconducting Materials Technologies*, Ed. P.Vincenzini, (Techna s.r.l., Faenza, Italy), 775-782 (1995);
20. B. Chesca, On the theory of the symmetrical double SQUID, in Proceedings of the **8th CIMTEC**, July 1994, Florence, Italy, *Advances in Science and Technology* **8**, *Superconductivity and Superconducting Materials Technologies*, Ed. P.Vincenzini, (Techna s.r.l., Faenza, Italy), 769-774 (1995);
21. B. Chesca, Sensitive Method for Studying the High Tc Superconducting Delicate Structure, in *Proceedings of the XXX Conference on Low Temperature Physics*, September 1994, Dubna, Russia, 136-137 (1994, in Russian).

C) Contributions to Books

1. B. Chesca, D. Koelle, and R. Kleiner, SQUID Theory, in **Superconducting Quantum Interference Devices**, Eds. John Clarke and Alex Braginski (John Wiles & Sons, Inc.), 29-92 (2004).

2. M. Mück, B. Chesca, and Y. Zhang, Radio Frequency SQUIDs and Their Applications, **NATO Advanced Study Institute** (ASI) **on Microwave Superconductivity**, Ed. Harold Weinstock, 505- 540 (2000).
3. B. Chesca, Double SQUID behavior in superimposed rf and dc magnetic fields, in **Nonlinear Superconducting Devices and High-Tc Materials**, Eds. R.D.Parmentier and N.F.Pedersen, (World Scientific Publishing Co.Pte.Ltd.), 209-217 (1995).