

LISTE DES TRAVAUX

Liste exhaustive à la date du 01/12/2022 des diverses publications et contributions scientifiques (orateur souligné, papier publié avec comité de lecture en bleu, et proceedings en bleu clair) :

“Fils Vibrants Microfabriqués”

S. Triqueneaux, E. Collin, D. J. Cousins, T. Fournier, C. Bäuerle, Yu. M. Bunkov and H. Godfrin

Journées du CRTBT 1999

Saint-Nizier du Moucherotte, France, 21-23 Juin 1999.

“ ^3He Solide Antiferromagnétique 2D : Liquide de Spins ?”

E. Collin, S. Triqueneaux, R. Harakaly, C. Bäuerle, Yu. M. Bunkov and H. Godfrin

Physique en Clips 1999

Grenoble, France, 16 Décembre 1999.

1)-“Superfluidity of ^3He Contained in Aerogel”

D. J. Cousins, C. Bäuerle, Yu. M. Bunkov, A.-S. Chen, E. Collin and H. Godfrin

International Conference on Low Temperature Physics LT-22

Espoo and Helsinki, Finland, 4-11 Août 1999

Physica B Vol **284**, p. 311-312 (2000)

2)-“Microfabrication of Silicon Vibrating Wires”

S. Triqueneaux, E. Collin, D. J. Cousins, T. Fournier, C. Bäuerle, Yu. M. Bunkov and H. Godfrin

International Conference on Low Temperature Physics LT-22

Espoo and Helsinki, Finland, 4-11 Août 1999

Physica B Vol. **284**, p. 2141-2142 (2000).

“ $2\text{D-}^3\text{He}$: A Strongly Frustrated Quantum Magnet” (invité)

E. Collin, S. Triqueneaux, R. Harakaly, C. Bäuerle, Yu. M. Bunkov and H. Godfrin

Conference of the European Physical Society

Condensed Matter Division Meeting CMD-2000

Montreux, Switzerland, 13-17 Mars 2000.

“Frustrated Magnetism in Two-Dimensional ^3He ” (invité)

E. Collin, R. Harakaly, S. Triqueneaux, C. Bäuerle, Yu. M. Bunkov and H. Godfrin

Proc. International Conference on Quantum Fluids and Solids QFS-2000

Minneapolis, Minnesota, USA, 6-11 Juin 2000.

“Nuclear Susceptibility of liquid ^3He ”

S. Triqueneaux, E. Collin, R. Harakaly, C. Bäuerle, Yu. M. Bunkov and H. Godfrin

Proc. International Conference on Quantum Fluids and Solids QFS-2000

Minneapolis, Minnesota, USA, 6-11 Juin 2000.

“Anomalous Superfluidity of ^3He confined inside Aerogel” (invité)

E. Collin, R. Harakaly, A.-S. Chen, D.J. Cousins, S. Triqueneaux, C. Bäuerle, Yu. M. Bunkov and H. Godfrin

Symposium E.U. Large Scale Facility User Meeting

Regensburg, Germany, 14-15 Juillet 2000.

“Frustrated Quantum Magnet and "Spin Liquid" Phase in Two-Dimensional ^3He ”
E. Collin, S. Triqueneaux, R. Harakaly, C. Bäuerle, Yu. M. Bunkov and H. Godfrin
Groupement De Recherche Oxydes à propriétés remarquables
Aussois, France, 13-15 Septembre 2000.

“Frustrated Quantum Magnet and "Spin Liquid" Phase in Two-Dimensional ^3He ”
E. Collin, S. Triqueneaux, R. Harakaly, C. Bäuerle, Yu. M. Bunkov and H. Godfrin
Groupement De Recherche Systèmes Fortement Corrélés
Aussois, France, 25-28 Septembre 2000.

“ ^3He Solide 2-Dimensionnel : Frustration Quantique et Liquide de Spins”
E. Collin, S. Triqueneaux, R. Harakaly, C. Bäuerle, Yu. M. Bunkov and H. Godfrin
Séminaire du CRTBT
Grenoble, France, 18 Septembre 2000.

3)-“Quantum Frustration and the "Spin Liquid" Phase of Two-Dimensional ^3He ”
E. Collin, S. Triqueneaux, R. Harakaly, M. Roger, C. Bäuerle, Yu. M. Bunkov and H. Godfrin
Phys. Rev. Lett. Vol. **86**, no 11, p. 2447-2450 (12 March 2001).

“Diffusion de Spins dans ^3He en Milieu Confiné”
E. Collin, R. Harakaly, Yu. Mukhraskii, Yu. M. Bunkov and H. Godfrin
Physique en Clips 2001
Grenoble, France, 23 Mars 2001.

“Nanoclusters Ferromagnétiques dans ^3He Solide Bidimensionnel”
E. Collin, S. Triqueneaux, R. Harakaly, C. Bäuerle, Yu. M. Bunkov and H. Godfrin
Journées du CRTBT
Saint-Hughes de Biviers, France, 16-18 Mai 2001.

“Dissemination of the Ultra-Low Temperature Scale, PLTS-2000”
R. Rusby, D. J. Cousins, D. Head, P. Mohandas, Yu. M. Bunkov, C. Bäuerle, R. Harakaly,
E. Collin, S. Triqueneaux, C. Lusher, J. Li, J. Saunders, B. Cowan, J. Nyéki, M. Digby,
J. Pekola, K. Gloos, P. Hernandez, M. de Groot, A. Peruzzi, R. Jochemsen, A. Chinchure,
W. Bosch, F. Mathu, J. Flokstra, D. Veldhuis, Y. Hermier, L. Pitre, A. Vergé,
F. Benhalima, B. Fellmuth, J. Engert
Berlin, Germany, 19-21 Juin 2001, Proceedings of TEMPMEKO, Vols. **1&2**, B. Fellmuth, J.
Seidel, G. Scholz (ed.), Berlin, VDE Verlag GmbH (2002).

“ ^3He Confined inside Aerogel”
E. Collin, R. Harakaly, C. Bäuerle, Yu. M. Bunkov and H. Godfrin
COSLAB Workshop
London, England, 7-10 Juillet 2001.

“Magnetic susceptibility of liquid ^3He ”
E. Collin, R. Harakaly, S. Triqueneaux, C. Bäuerle, Yu. M. Bunkov and H. Godfrin
International Conference on Quantum Fluids and Solids QFS-2001
Konstanz, Germany, 21-27 Juillet 2001.

“Phase coexistence in 2D solid ^3He adsorbed on ^4He preplated Graphite”

E. Collin, R. Harakaly, C. Bäuerle, Yu. M. Bunkov and H. Godfrin
International Conference on Quantum Fluids and Solids QFS-2001
Konstanz, Germany, 21-27 Juillet 2001.

“Mysterious properties of ^3He confined inside Aerogel”

E. Collin, R. Harakaly, C. Bäuerle, Yu. M. Bunkov and H. Godfrin
International Conference on Quantum Fluids and Solids QFS-2001
Konstanz, Germany, 21-27 Juillet 2001.

“2D- ^3He : Quantum Frustration and Spin Liquid”

E. Collin, R. Harakaly, C. Bäuerle, Yu. M. Bunkov and H. Godfrin
Séminaire Basses températures Royal Holloway
London, England, 26 Septembre 2001.

“Effets de désordre sur l' ^3He à ultra-basses températures”

E. Collin, sous la direction de H. Godfrin et Yu. M. Bunkov, thèse de Doctorat, UJF
Grenoble, France, 29 Janvier 2002.

“Microwave excitation of the Rydberg states of electrons on helium”

E. Collin, W. Bailey, P. Fozooni, P. G. Frayne, P. Glasson, K. Harrabi, M. J. Lea, G.
Papageorgiou
19th General Conference of the EPS Condensed Matter Division, Condensed Matter and
Materials Physics
CMD19-CMMP 2002
Brighton, England, 7-11 Avril 2002.

“Microwave excitation of the Rydberg states of electrons on helium”

E. Collin, W. Bailey, P. Fozooni, P. G. Frayne, P. Glasson, K. Harrabi, M. J. Lea, G.
Papageorgiou
The Annual Low Temperature Group Meeting IoP-2002
London, England, 28 Mai 2002.

4)-“Search for supersymmetric Dark Matter with superfluid ^3He (MACHe3)”

F. Mayet, D. Santos, Yu. M. Bunkov, E. Collin, H. Godfrin
Phys. Letts. B Vol. **538**, p. 257-265 (2002).

“Microwave excitation of the Rydberg states of electrons on helium”

“Writing Q-bits using microwave Rabi oscillations”

E. Collin, W. Bailey, P. Fozooni, P. G. Frayne, P. Glasson, K. Harrabi, M. J. Lea, G.
Papageorgiou
EU Network meeting electrons on cryogenic substrates
London, England, 21-22 Juin 2002.

“Excitation micro-onde des états électroniques sur Hélium ; vers l’ordinateur quantique”

E. Collin, W. Bailey, P. Fozooni, P. G. Frayne, P. Glasson, K. Harrabi, M. J. Lea, G.
Papageorgiou
Séminaire Groupe Quantronique, SPEC-CEA
Saclay, France, 3 Juillet 2002.

“Excitation micro-onde des états électroniques sur Hélium ; vers l’ordinateur quantique”
E. Collin, W. Bailey, P. Fozooni, P. G. Frayne, P. Glasson, K. Harrabi, M. J. Lea, G. Papageorgiou
Séminaire fluides quantiques CRTBT
Grenoble, France, 9 Juillet 2002.

“2D-³He : from a pure Spin-liquid phase to ferromagnetic nanoclusters” (invité)
E. Collin, R. Harakaly, C. Bäuerle, Yu. M. Bunkov and H. Godfrin
Int. Conf. on Low Temperature Physics LT23, Hiroshima, Japan, 20-27 Août 2002.

“Topological defects and coherent magnetization precession of ³He in aerogel”
Yu. M. Bunkov, E. Collin, H. Godfrin, R. Harakaly
Int. Conf. on Low Temperature Physics LT23, Hiroshima, Japan, 20-27 Août 2002.

5)-“Detecting electrons on helium with a single-electron transistor (SET)”
G. Papageorgiou, Yu. Mukharsky, K. Harrabi, P. Glasson, P. Fozooni, P. G. Frayne, E. Collin and M. J. Lea
Int. Conf. on Low Temperature Physics LT23, Hiroshima, Japan, 20-27 Août 2002
Physica E, Vol. **18**, p. 179-181 (2003).

6)-“Microwave saturation and the Rabi frequency of the Rydberg states of electrons on helium”
E. Collin, W. Bailey, P. Fozooni, P. G. Frayne, P. Glasson, K. Harrabi, M. J. Lea, G. Papageorgiou
Int. Conf. on Low Temperature Physics LT23, Hiroshima, Japan, 20-27 Août 2002
Physica E, Vol. **18**, p. 186-187 (2003).

“Microwave excitation of the Rydberg states of electrons on helium ; towards quantum computing”
E. Collin, W. Bailey, P. Fozooni, P. G. Frayne, P. Glasson, K. Harrabi, M. J. Lea, G. Papageorgiou
Manchester University Physics department, England, 09 Octobre 2002.

7)-“Microwave Saturation of the Rydberg States of Electrons on Helium”
E. Collin, W. Bailey, P. Fozooni, P. G. Frayne, P. Glasson, K. Harrabi, M. J. Lea and G. Papageorgiou
Phys.Rev.Lett. Vol. **89**, no 24 p. 5301-5304 (20 November 2002) ; Cond-mat/0208001.

“Electrons 2D confinés sur Hélium : application à l’Ordinateur Quantique”
E. Collin, W. Bailey, P. Fozooni, P. G. Frayne, P. Glasson, K. Harrabi, M. J. Lea, G. Papageorgiou
CRTBT Grenoble, France, 07 Avril 2003.

8)-“On the Spin-liquid phase of two-dimensional ³He” (invité)
E. Collin, Yu.M. Bunkov, H. Godfrin
Conférence Highly Frustrated Magnets ILL, Grenoble, France, 26-30 Août 2003
J. Phys. : Condens. Matter Vol. **16** (2004) S691-S699.

9)-“Confined electron crystals and Rydberg states on liquid helium”

P.H. Glasson, E. Collin, P. Fozooni, P.G. Frayne, K. Harrabi, W. Bailey, G. Papageorgiou, Y. Mukharsky, M.J. Lea
EP2DS-15

15th International Conference on Electronic Properties of Two-Dimensional Systems
Nara, Japon, 14-18 Juillet 2003

Physica E, Vol. **22**, issues 1-3, p. 761-766 (April 2004).

10)-“Topological defects and coherent magnetization precession of ^3He in aerogel”

Yu. M. Bunkov, E. Collin, H. Godfrin, R. Harakaly
Physica B, Vols. **329-333**, p. 305 (2003).

“Counting Electrons on Helium”

P.H. Glasson, E. Collin, P. Fozooni, P.G. Frayne, K. Harrabi, W. Bailey, G. Papageorgiou,
M.J. Lea

EU Network meeting electrons on cryogenic substrates
Grenoble, France, 12 septembre 2003.

“Project of a superfluid ^3He detector for direct detection of non-baryonic dark matter :
MACHe3”

E. Moulin, F. Naraghi, D. Santos, E. Collin, C. Winkelmann, Yu. Bunkov, and H. Godfrin
Proc. of the 4th. International Conference on "Where Cosmology and Fundamental Physics
Meet", Marseille, June 2003, [ArXiv: astro-ph/0309325](https://arxiv.org/abs/astro-ph/0309325).

“Superconducting Charge-flux Josephson Qubits” (invité)

E. Collin, G. Ithier, P. Joyez, D. Vion, D. Estève

Compte rendu de la conférence EUCAS, R. Vaglio, G. Donaldson, eds. In : *Proceedings of
the 6th European Conference on Applied Superconductivity*, Sorrente, Italie, 14-18 septembre
2003, Institute of Physics Conference Series **181**, pp. 27–34 (2004).

“Present status of the Quantronium Experiment”

A. Aassime, E. Collin, A. Cottet, M. Devoret, D. Estève, G. Ithier, P. Joyez, H. Pothier, C.
Urbina, D. Vion

Squbit2 workshop, Pise, Italie, 26-27 septembre 2003.

“Qubits Josephson : le Quantronium”

E. Collin, G. Ithier, A. Aassime, P. Joyez, D. Vion, D. Estève

Présentation des nouveaux arrivants, SPEC-CEA Saclay
Saclay, le 2 Décembre 2003.

“Counting Electrons on Liquid Helium”

P.Glasson, G.Papageorgiou, K.Harrabi, E.Collin, P.Fozooni, P.G.Frayne, W.Bailey,
Y.Mukharsky, M.I.Dykman, V.Antonov and M.J.Lea

SSQIP 2003, Solid State Quantum Information Processing Conference
Amsterdam, Pays-Bas, 15-18 December 2003.

“Operation of a Solid-state Quantum Bit Circuit”

E. Collin, G. Ithier, A. Aassime, P. Joyez, D. Vion, D. Estève

SSQIP 2003, Solid State Quantum Information Processing Conference
Amsterdam, Pays-Bas, 15-18 December 2003.

11)-“Vibrating wire thermometry in superfluid ^3He ”

C. B. Winkelmann, E. Collin, Yu. M. Bunkov, H. Godfrin,
J. of Low Temp. Phys. Vol. **135**, p. 3 (2004).

12)-“NMR-like Control of a Quantum Bit Superconducting Circuit”

E. Collin, G. Ithier, A. Aassime, P. Joyez, D. Vion, D. Estève
Phys. Rev. Lett. Vol. **93**, 157005 (2004).

Article selected for the October 2004 issues of :

Virtual Journal of Nanoscale Science & Technology (APS-AIP <http://www.vjnano.org>)

Virtual Journal of Quantum Information (APS-AIP <http://www.vjquantuminfo.org>)

Virtual Journal of Applications of Superconductivity (APS-AIP <http://www.vjsuper.org>).

“Decoherence measurements during the free evolution of a Josephson quantum bit : the quantronium” (invité)

G. Ithier, E. Collin, P. Joyez, P. Meesson, D. Vion, D. Estève, F. Chiarello, A. Shnirman, Y. Makhlin, G. Schön

Compte rendu de la conference MQC2, P. Silvestrini ed. : *IVth International Workshop on Macroscopic Quantum Coherence and Computing*, (Kluwer Academic, Plenum Publishers, New York, 2005, Naples, June 7-10 (2004).

“Analysis of decoherence of a superconducting quantum bit”

G. Ithier, E. Collin, P. Joyez, D. Vion, D. Estève

20th Condensed Matter Division Conference (CMD) of the European Physical Society, Prague, July 19-23 (2004).

“Quantum information processing in solid states: Fighting Decoherence in a Josephson Qubit Circuit” (invité)

E. Collin, G. Ithier, A. Aassime, P. Joyez, D. Vion, D. Estève

Proceedings of the 39th Rencontres de Moriond “Quantum information and Decoherence in Nanosystems”, D. C. Glatli, M. Sanquer and J. Tran Thanh Van (eds., Thê' Giöi Publishers, Vietnam) (2005), pp. 125-130, La Thuile, Italie, 25 Janvier au 1^{er} Février 2004, Realizing Controllable Quantum States: Mesoscopic Superconductivity and Spintronics - In the Light of Quantum Computation, pp. 247–254 (2005).

“Manipulation de l'état quantique d'un circuit électrique supraconducteur”

E. Collin, G. Ithier, P. Joyez, D. Vion, and D. Estève

Conférence organisée par le CEA sur les nanotechnologies, Grenoble, 17 juin (2004).

13)-“Magnetization and Spin-Diffusion of Liquid ^3He in Aerogel”

J.A. Sauls, Yu.M. Bunkov, E. Collin, H. Godfrin and P. Sharma
Phys. Rev. B Vol. **72**, 024507 (2005).

14)-“Zener enhancement of quantum tunneling in a two-level superconducting circuit”

G. Ithier, E. Collin, P. Joyez, D. Vion, D. Estève, J. Ankerhold, H. Grabert

Phys. Rev. Lett. Vol. **94**, 057004 (2005)

Erratum : G. Ithier, E. Collin, P. Joyez, D. Vion, D. Esteve, J. Ankerhold, and H. Grabert
Phys. Rev. Lett. Vol. **96**, 029901 (2006).

15)-“ ^3He NMR in aerogel” (invité)

Yu. Bunkov, E. Collin, H. Godfrin

Today International Symposium and the 9th ISSP International symposium on Quantum Condensed Systems, Kashiwa, Chiba, Japan 16-19 November (2004), Journal of Physics and Chemistry of Solids, Vol. **66**, Issues 8-9, p. 1325-1329 (August-September 2005).

“Semi-Superfluid ^3He ” Yu. Bunkov, E. Collin, H. Godfrin, (invité)

ESF COSLAB Network Conference “Disorder and Topological Defects, Helium Primer” Chamrousse, Grenoble (France), 17-22 December 2004.

16)-“Counting individual trapped electrons on liquid Helium”

G. Papageorgiou, P. Glasson, K. Harrabi, V. Antonov, E. Collin, P. Fozooni, P.G. Frayne, M.J. Lea, D.G. Rees, Yu. Mukharsky

Applied Physics Letters Vol. **86**, 153106 (2005)

Article selected for the April 2005 issue of :

Virtual Journal of Quantum Information (APS-AIP <http://www.vjquantuminfo.org>).

“Counting Individual Electrons on Liquid Helium”

G. Papageorgiou, P. Glasson, K. Harrabi, V. Antonov, E. Collin, P. Fozooni, P.G. Frayne, M.J. Lea, Y. Mukharsky and D.G. Rees

ArXiv: cond-mat/0405084 (2004).

“ ^3He NMR in aerogel”

E. Collin, Yu. Bunkov, H. Godfrin

Séminaire au Kapitza Institute, Moscou, 15 juin (2005).

17)-“Decoherence in a superconducting quantum bit circuit”

G. Ithier, E. Collin, P. Joyez, P. J. Meeson, D. Vion, D. Estève, F. Chiarello, A. Shnirman, Y. Makhlin, J. Schrieffer, and G. Schön

Phys. Rev. B, Vol. **72**, 134519 (2005).

“ Solid state quantum bit circuit ”

G. Ithier, F. Nguyen, E. Collin, N. Boulant, P.J. Meeson, P. Joyez, D. Vion, and D. Estève, edited by G. Benenti in “*Proceedings of the International School of Physics Enrico Fermi on Quantum Computers, Algorithms and Chaos*”, Varenna, Italy, July 5-15 (2005), proceedings of the International School of Physics "Enrico Fermi", 162, pp. 447-469 (2006).

“Superfluid ^3He : application for measurements in astrophysics” (invité)

Yu.M. Bunkov, E. Collin, H. Godfrin,

ULT-2005, Gainesville, Florida, USA, 18-20 August 2005.

“How accurately do we know the Landau parameter of liquid ^3He ?”

H. Godfrin, V. Goudon, S. Triqueneaux, Th. Prouvé, E. Collin, Yu. M. Bunkov

24th. International Conference on Low Temperature Physics LT24

Orlando, Florida, USA, 10-17 august 2005.

“Les ultra-basses températures à la recherche de la matière sombre de l’Univers” (invité)

H. Godfrin, Yu. M. Bunkov, E. Collin

Année mondiale de la Physique

Université de Pau, en liaison audiovisuelle avec l’Université de Bordeaux

Pau, 22 septembre 2005.

18)-“Trapping Single Electrons on Liquid Helium”

P. Glasson, G. Papageorgiou, K. Harrabi, D.G. Rees, V. Antonov, E. Collin, P. Fozooni, P.G. Frayne, Y. Mukharsky and M.J. Lea
J.Phys.Chem.Solids, Vol. 66, Issues 8-9, Pages 1539-1543, August-September (2005).

“Ultra Low Temperature Instrumentation for Measurements in Astrophysics: ULTIMA” (invité)
Yu. Bunkov, E. Collin, H. Godfrin
Séminaires d'intérêt général au Service de Physique de l'Etat Condensé (CEA- Orme des Merisiers), October 19, 2005.

El proyecto ULTIMA : detectores de particulas a ultrabajas temperaturas (conférence invitée)
H. Godfrin, Yu. M. Bunkov, E. Collin
50 años del Instituto de Fisica Dr. J. A. Balseiro
Centro Atomico Bariloche
Bariloche, Argentine, 21/12/2005.

“ULTIMA: a 100 μ K superfluid ^3He detector”
E. Collin, Yu. M. Bunkov, H. Godfrin
Séminaire à l'université de Cornell, Ithaca, USA, 13 décembre (2005).

19)-“Ferromagnetic Nanoclusters in two-dimensional ^3He ”
E. Collin, C. Bäuerle, Yu.M. Bunkov and H. Godfrin
Phys. Rev. B Vol. **73**, 125421 (2006)
Article selected for the April 3, 2006 issue of :
Virtual Journal of Nanoscale Science & Technology (<http://www.vjnano.org>).

20)-“ULTIMA : a bolometric detector for Dark Matter search using superfluid ^3He ”
C.B. Winkelmann, J. Elbs, E. Collin, Yu.M. Bunkov, H. Godfrin
Proceedings of the 11th. International Workshop on Low Temperature Detectors, LTD-11,
Takeda Hall, University of Tokyo, Japan, 31 July - 5 August 2005
Nuclear Instruments and Methods in Physics Research, section A, Vol. 559, issue 2, pp. 384-386, 15 April (2006).

“Semi-superfluidity in ^3He ” (invité)
Yu.M. Bunkov, E. Collin, H. Godfrin, Quantum Phenomena at low Temperatures, ULTI users meeting, Lammi Biological Station, 21-26 April 2006.

21)-“How accurately do we know the F0a Landau parameter of Liquid ^3He ? ”
H. Godfrin, V. Goudon, S. Triqueneaux, Th. Prouvé, E. Collin, Yu.M. Bunkov
24th. International Conference on Low Temperature Physics, LT24 10-17 August 2005,
Orlando, Florida, USA; AIP Conference Proceedings, Vol. 850, 1627 (2006).

“Status of the Dark Matter search project « ULTIMA »”
Yu. M. Bunkov, E. Collin, J. Elbs, H. Godfrin and C. Winkelmann
XLI Rencontres de Moriond 2006, Contents and Structures of the Universe, La Thuile, Italy
(March 18-25, 2006), Proceedings of the 41st Rencontres de Moriond: Contents and Structures of the Universe, pp. 295–298 (2006).

22) “Decoherence of a Josephson quantum bit during its free evolution: The quantronium”
G. Ithier, E. Collin, P. Joyez, P. J. Meeson, D. Vion, D. Esteve, F. Chiarello, A. Shnirman, Y. Makhlin & G. Schön
In: Ruggiero, B., Delsing, P., Granata, C., Pashkin, Y., Silvestrini, P. (eds), Quantum Computing in Solid State Systems, pp. 1–9 (2006).

“Fighting decoherence in a Josephson qubit circuit”
Collin, E; Ithier, G; Joyez, P; Vion, D; [Esteve, D](#)
Conference Information: 3rd International Symposium on Mesoscopic Superconductivity and Spintronics, Date: MAR 01-04, 2004 Atsugi City JAPAN
Source: REALIZING CONTROLLABLE QUANTUM STATES Pages: 247-254
Published: 2005.

“Decoherence sources of a superconducting quantum bit”
[Ithier, G](#); [Boulant, N](#); [Collin, E](#); [Meeson, PJ](#); [Joyez, P](#); [Vion, D](#); [Esteve, D](#); [Chiarello, F](#); [Shnirman, A](#); [Makhlin, Y](#); [Schon, G](#)
Conference Information: 24th International Conference on Low Temperature Physics (LT24), Date: AUG 10-17, 2005 Orlando FL, AIP Conference Proceedings **850**, pp. 933–934 (2006).

23)-“Heat capacity of adsorbed ^3He at ultra-low temperatures”
[J. Elbs](#), C.B. Winkelmann, Yu.M. Bunkov, E. Collin, H. Godfrin
Int. Conf. on Quantum Fluids and Solids, QFS 2006, Kyoto, Japan, 1 – 6 august (2006)
J. of Low Temp. Phys. Vol **148**, Num. 5-6, p 749-753, september (2007).

“Silicon Vibrating Wires as Micromechanical probes in Helium Fluids”
E. Collin, [H. Godfrin](#), Yu. M. Bunkov, L. Filleau, and T. Fournier
Int. Conf. on Quantum Fluids and Solids, QFS 2006, Kyoto, Japan, 1 – 6 august (2006).

“The ULTIMA project: superfluid ^3He detector” (invité)
[Johannes Elbs](#), Clemens Winkelmann, Yuriy Bunkov, Eddy Collin, and Henri Godfrin
Int. Conf. on Quantum Fluids and Solids, QFS 2006, Kyoto, Japan, 1 – 6 august (2006).

“Decoherence of a quantum bit circuit”
[G. Ithier](#), F. Nguyen, E. Collin, N. Boulant, P.J. Meeson, P. Joyez, D. Vion, and D Estève.
Progress in Mathematical Physics **48**, pp. 125–149 (2007).

24) “On the sensitivity of superfluid ^3He bolometers for ULTIMA”
[J. Elbs](#), C.B. Winkelmann, Yu.M. Bunkov, E. Collin, [H. Godfrin](#),
Proceedings of IDM 2006, 6th International Workshop on the Identification of Dark Matter
Rhodes, Greece, September 11 - 16th, 2006
World Scientific, ed. M. Axenides, G. Fanourakis and J. Vergados, p 571-575 (2007).

“Project ULTIMA (Particle detector with working temperature 100 μK)” (invité)
[Yu.M. Bunkov](#), E. Collin, H. Godfrin,
Kamioka Neutrino Observatory, Institute for Cosmic Ray Research, Tokyo University,
23 October 2006.

25)-“Bolometric calibration of a superfluid ^3He detector for Dark Matter search: direct measurement of the scintillated energy fraction for neutron, electron and muon events”
C.B. Winkelmann, [J. Elbs](#), Yu. M. Bunkov, E. Collin, H. Godfrin, M. Krusius,
Nuclear Instrum. Meth. Physics Research, A 574, 264-271 (2007); [ArXiv:physics/0611273](#).

“Vibrating detectors inside superfluid ^3He ”

E. Collin, Yu. Bunkov, H. Godfrin

Workshop on Dark Matter Search and Related Topics, Grenoble, le 17/01/2007.

“Decoherence of a quantum bit circuit”

Ithier, G; Nguyen, F; Collin, E; Boulant, N; Meeson, PJ; Joyez, P; Vion, D; Esteve, D,
Conference Information: Poincare Seminar 2005, Date: APR, 2005 Inst Henri Poincare Paris
FRANCE

Source: QUANTUM DECOHERENCE: POINCARÉ SEMINAR 2005 Volume: 48 Pages:
125-149, Published: 2007.

“Micromécanique à basse température”

Séminaire MCBT-Institut Néel

E. Collin, Grenoble le 06/03/2007.

“ULT Group: At the low temperature frontier”

Yu. Bunkov E. Collin, H. Godfrin

Journées du département MCBT 14 mai 2007.

26)-“Electron nuclear recoil discrimination by pulse shape analysis”

J. Elbs, Yu. M. Bunkov, E. Collin, H. Godfrin, O. Suvorova

International Symposium on Quantum Fluids and Solids, QFS 2007

1-6 August, 2007 Kazan State University, Russian Federation.

J. of Low Temp. Phys., vol. **150**, no 3-4, p. 536-543 (2008).

DOI: 10.1007/s10909-007-9603-7

27)-“ULTIMA: Magnetic field dependence of the calibration factor”

J. Elbs, Yu. M. Bunkov, E. Collin, H. Godfrin, O. Suvorova, C. Winkelmann

12th International Workshop on Low Temperature Detectors, LTD12, Paris July 22-27, 2007

J. of Low Temp. Phys., Volume: **151**, Issue: 3-4, Pages: 860-864 (Mai 2008).

DOI: 10.2007/s10909-008-9756-z

“A quantum fluid used as a detector for Dark Matter: superfluid ^3He ”

J. Elbs, Yu.M. Bunkov, E. Collin, H. Godfrin

International Symposium on Quantum Fluids and Solids, QFS 2007

Kazan State University, Russian Federation, 1-6 August, 2007.

28)-“Silicon Vibrating Wires at Low Temperatures”

Eddy Collin, Laure Filleau, Thierry Fournier, Yuriy M. Bunkov and Henri Godfrin

J. of Low Temp. Phys., vol. **150**, no 5-6, p. 739 – 790 (2008); DOI: 10.1007/s10909-007-9607-3

Erratum Volume **157**, Issue 5, Page 566 (2009); DOI: 10.1007/s10909-009-9989-5

“Micro-mechanics at low temperatures” (invité)

E. Collin, Yu. Bunkov, H. Godfrin

Workshop on Low Temperature Physics

Japan-France Joint Project

Kyoto, Japan, 12-13 April 2008.

29)-“Strong Orientational Effect of Stretched Aerogel on the ^3He Order Parameter”

J. Elbs, Yu. M. Bunkov, E. Collin, H. Godfrin, and G. E. Volovik

Phys. Rev. Lett. Vol. **100**, 215304 (2008).

“SETs for Electron Detection”

Philip Glasson, David Rees, Luke Simkins, Vladimir Antonov, Peter Frayne, Mike Lea, Philip Meeson, RHUL

and Eddy Collin, I. NEEL

RIKEN electrons on Helium workshop, japan, 7 avril 2008.

Atelier de l’Institut Néel,

H. Godfrin, E. Collin, B. Canals, J-C. Anglès d’Auriac

“frustration magnétique” le 5 juin 2008, Grenoble.

Atelier de l’Institut Néel,

Yu. Bunkov, E. Collin, H. Godfrin

“cryogénie” le 11 juin 2008, Grenoble.

“Manipulation of the order parameter of superfluid ^3He by the anisotropy of aerogel”

Yu. Bunkov, E. Collin, J. Elbs, H. Godfrin, G. Volovik

LT25 conference on low temperature physics, Amsterdam 6-13 august 2008.

30)-“Magnetic susceptibility of liquid ^3He ”

V. Goudon, S. Triqueneaux, E. Collin, Yu. Bunkov, H. Godfrin

LT25 conference on low temperature physics, Amsterdam 6-13 august 2008

Published in the proceedings "Journal of Physics: Conference Series" (JPCS), J. of Physics, Conference Series, **150** 032024 (2009).

31)-“Finite size effects in ferromagnetic ^3He nano-clusters”

E. Collin, B. Canals, J.-C. Anglès d’Auriac, H. Godfrin

LT25 conference on low temperature physics, Amsterdam, Netherlands, 6-13 august 2008

Proceedings "Journal of Physics: Conference Series" (JPCS), J. of Physics, Conference Series, **150**, 042018 (2009).

“Superconductor coated electro-mechanical systems for low and ultra-low temperature physics”

E. Collin, Y. Bilbao-Zarraga, Yu. M. Bunkov, H. Godfrin

ULT 2008 conference frontiers of low temperature physics, Royal Holloway University of London, England, 14-17 August 2008.

“ULT MNEMS” (invité)

E. Collin, Yu. Bunkov, H. Godfrin

Séminaire Quantronique,

CEA Saclay, 5 septembre 2008.

32)-“Thermally excited tunneling from a metastable electronic state in a single-Cooper-pair transistor”

D. G. Rees, P. Glasson, L. R. Simkins, E. Collin, V. Antonov, P. G. Frayne,

P. J. Meeson, and M. J. Lea

Appl. Phys. Lett. **93**, 173508 (2008).

Article selected for the November 1, 2008 issue of:
Virtual Journal of Applications of Superconductivity (<http://www.vjsuper.org>)
Virtual Journal of Nanoscale Science & Technology (<http://www.vjnano.org>).

« Ultima : de l'hélium trois ultra-froid pour traquer la Matière Noire »

H. Godfrin, E. Collin, Yu. Bunkov (invited talk)

Association Française du Froid - Commission de Cryogénie et de Supraconductivité
9èmes Journées de Cryogénie et de Supraconductivité
AUSSOIS 25-27 mars 2009.

33)-“ ‘Fast Exchange’ model visualized with ^3He confined in aerogel: a Fermi liquid in contact with a Ferromagnetic solid”

E. Collin, S. Triqueneaux, Yu.M. Bunkov and H. Godfrin
Phys. Rev. B **80**, 094422-1 (2009).

34)-“Novel ‘vibrating wire like’ NEMS and MEMS structures for low temperature physics”

E. Collin · J. Kofler · J.-S. Heron · O. Bourgeois · Yu. M. Bunkov · H. Godfrin (invité)

QFS 2009, Northwestern University, 05-11/08/2009

J. of Low Temp. Phys., Volume **158**, Issue 3, page 678 (2010); DOI 10.1007/s10909-009-9960-5

35)-“Evidence for magnon BEC in superfluid $^3\text{He-A}$ ”

P. Hunger, Yu. M. Bunkov, E. Collin, and H. Godfrin

QFS 2009, Northwestern University, 05-11/08/2009

J. of Low Temp. Phys., Volume **158**, Issue 1, page 129 (2010); DOI 10.1007/s10909-009-9970-3

36)-“Thermal excitation of large charge offsets in a single-Cooper-pair transistor”

L.R. Simkins, D.G. Rees, P.H. Glasson, V. Antonov, E. Collin, P.G. Frayne, P.J. Meeson, M.J. Lea

J. Appl. Phys., online 17 December 2009, in Journal of Applied Physics (Vol.106, Issue 12) 124502 (2009). DOI: 10.1063/1.3266012

Article selected for the January 1, 2010 issue of:

Virtual Journal of Applications of Superconductivity (<http://www.vjsuper.org>).

37)-“Metallic coatings of microelectromechanical structures at low temperatures: Stress, elasticity, and nonlinear dissipation”

E. Collin, J. Kofler, S. Lakhroufi, S. Pairis, Yu. M. Bunkov, and H. Godfrin,

Journal of Applied Physics, Vol. **107**, Issue 11, 114905 (7 June 2010).

“Measuring ultra-low temperatures with microfabricated silicon vibrating wire resonators: present developments within the Microkelvin project” (invité)

E. Collin, Yu. Bunkov, H. Godfrin

PTB-Low temperature workshop, Berlin, Germany (10.12.2009).

“Micro & Nano mechanics within Ultra-Low Temperature Physics”

E. Collin, Yu. Bunkov, H. Godfrin

Workshop on "Quantum Transport in Nano Electro Mechanical Systems",
Bordeaux 08-09 April 2010, France.

38)-“Addressing geometric non-linearities with cantilever MEMS: beyond the Duffing model”

E. Collin, Yu.M. Bunkov, H. Godfrin

Phys. Rev. B vol. **82**, 235416 (2010).

“Superfluid ^3He immersed in radially squeezed aerogel: BEC of magnons and superfluid phase transition”

P. Hunger, Yu.M. Bunkov, E. Collin, H. Godfrin
QFS 2010 Grenoble, 1st-7th august 2010.

39)-“A tunable hybrid electro-magnetomotive NEMS device for low temperature physics”
QFS 2010 Grenoble, 1st-7th august 2010

E. Collin, T. Moutonet, J.-S. Heron, O. Bourgeois, Yu.M. Bunkov, H. Godfrin
J. of Low Temp. Phys., Vol. **162**, 653 (2011).

Preface

H. Godfrin, H. Meyer, Y. Bunkov, and E. Collin,
QFS 2010 Grenoble, 1st-7th august 2010
J. Low Temp. Phys. Vol. **162**, 81 (2011).

“Ultra-cold micro/nanomechanics”

E. Collin
Journées du département MCBT, Villard de Lans, 12 octobre 2010.

“Microkelvin JRA4 in Grenoble”

E. Collin, Yu. Bunkov, H. Godfrin
Microkelvin JRA4 meeting, Heidelberg, 05/11/2010.

“Micro and Nano mechanics at ultra-low temperature”

E. Collin
France-Japan Collaboration Workshop,
RIKEN low temperature laboratory,
17/01/2011, Tokyo, Japan.

“Micro/nano mechanics at very low temperatures”

E. Collin
Topical Meeting on Nanomechanics
23 juin 2011, Institut Néel, CNRS-Grenoble, France.

40)-“Nonlinear parametric amplification in a tri-port nanoelectromechanical device”

E. Collin, T. Moutonet, J.-S. Heron, O. Bourgeois, Yu. M. Bunkov, H. Godfrin,
Phys. Rev. B **84**, 054108 (2011).

“MEMS and NEMS probes for low temperature physics: a nonlinear issue”

E. Collin, M. Defoort, T. Moutonet, J. -S. Heron, O. Bourgeois, Yu. M. Bunkov, H. Godfrin,
And F. Pistolesi,
OMNT meeting on nanomechanics, 4-5 juillet 2011, Toulouse (France).

“Low temperature nanomechanical probes: from linear to nonlinear regimes” (invité)

E. Collin, Yu. Bunkov, H. Godfrin
The 26th international conference on low temperature physics (LT26)
Beijing, China 10-17 august 2011.

41)-“Superfluid transition in superfluid ^3He in radially compressed aerogel”

P. Hunger, Yu. M. Bunkov, E. Collin, and H. Godfrin,
The 26th international conference on low temperature physics (LT26)
Beijing, China 10-17 august 2011,
J. Phys: Conf. Series **400**, 012019 (2012).

42)-“Audio mixing in a tri-port nano-electro-mechanical device”

M. Defoort, K. Lulla, J-S. Heron, O. Bourgeois, E. Collin, and F. Pistolesi
Appl. Phys. Lett. **99**, 233107 (2011).
Article selected for the December 19, 2011 issue of:
Virtual Journal of Nanoscale Science & Technology, <http://www.vjnano.org>.

“Micro/nano mechanics at low temperatures: a nonlinear issue”

E. Collin, M. Defoort, K. Lulla, Yu.M. Bunkov, H. Godfrin, O. Bourgeois, F. Pistolesi
GDR mésophysique, 5-8 December 2011, Aussois (France).

“Micro/nano mechanics at low temperatures: a nonlinear issue” (invité)

E. Collin, M. Defoort, K. Lulla, Yu.M. Bunkov, H. Godfrin, O. Bourgeois, F. Pistolesi
CMMP11 conference, 13 - 15 December 2011, Manchester, UK.

43)-“In-situ comprehensive calibration of a tri-port nano-electro-mechanical device”

E. Collin, M. Defoort, K. Lulla, T. Moutonet, J.-S. Heron, O. Bourgeois, Yu. M. Bunkov, H. Godfrin
Rev. Sci. Instrum. Vol. **83**, 045005 (2012).

“Nano-mechanics”

E. Collin
French-Japanese collaboration workshop, 27/01/2012, Institut Néel – Grenoble.

“Nonlinear dynamics in nanomechanical resonators” (invited)

E. Collin, M. Defoort, K. Lulla, J-S. Heron, A. Sultan, T. Moutonet, O. Bourgeois, Yu. Bunkov, H. Godfrin, and F. Pistolesi
Microkelvin meeting, Smolenice, Slovakia, 18-24 march 2012.

“Low temperature micro/nano mechanics” (invited)

E. Collin, M. Defoort, K. Lulla, C. Blanc, O. Bourgeois, Yu. Bunkov, H. Godfrin
OIST workshop on Nonequilibrium Phenomena in Complex Quantum Systems: from Correlated Electrons to Mesoscopic Devices, Okinawa, Japan 23-27 April 2012.

“Silicon nitride mechanical nano-resonators”

K. Lulla, M. Defoort, C. Blanc, O. Bourgeois, Yu.M. Bunkov, H. Godfrin, and E. Collin,
OIST workshop on Nonequilibrium Phenomena in Complex Quantum Systems: from Correlated Electrons to Mesoscopic Devices, Okinawa, Japan 23-27 April 2012.

“Nonlinear dynamics in nanomechanical resonators” (invited)

E. Collin, M. Defoort, K. Lulla, C. Blanc, J-S. Heron, T. Moutonet, F. Pistolesi, O. Bourgeois, Yu.M. Bunkov, and H. Godfrin
QFS 2012, Lancaster 15-21 august 2012, UK.

44)-“Stressed Silicon Nitride Nanomechanical Resonators at Helium Temperatures”
M. Defoort, K.J. Lulla, C. Blanc, H. Ftouni, O. Bourgeois, and E. Collin,
QFS 2012, Lancaster 15-21 august 2012, UK
J. of Low Temp. Phys., Vol. **171**, Issue 5-6, p. 731-736 (June 2013); DOI 10.1007/s10909-012-0693-5.

“Nonlinear dynamics in nanomechanical resonators”
E. Collin, M. Defoort, K. Lulla, C. Blanc, J-S. Heron, T. Moutonet, F. Pistolesi, O. Bourgeois,
Yu.M. Bunkov, and H. Godfrin
CMD-CMMP 2012, Edinburgh, 02-07 September 2012, UK.

“Silicon nitride mechanical nano-resonators”
K. Lulla, M. Defoort, C. Blanc, O. Bourgeois, Yu.M. Bunkov, H. Godfrin, and E. Collin,
CMD-CMMP 2012, Edinburgh, 02-07 September 2012, UK.

45)-“Thermal conductivity measurement of suspended Si-N membranes from 10 K to 275 K using the 3ω -Völklein method”
H. Ftouni, C. Blanc, A. Sikora, J. Richard, M. Defoort, K. Lulla, E. Collin, O. Bourgeois,
Eurotherm 2012, 04-07 September 2012, Poitiers, France.
Journal of Physics: Conference Series Vol. **395**, 012109 (2012).

“Efficient parametric amplification in a nano-electro-mechanical device”
E. Collin & O. Bourgeois
Néel Institute / Highlights 6 (Sept. 2012).

“Micro/nano mechanics at low temperatures: a nonlinear issue”
E. Collin
Séminaire MCBT-Institut Néel, Grenoble, le 30/10/2012.

46)- “Evidence for the role of normal-state electrons in nanoelectromechanical damping mechanisms at very low temperatures”
K.J. Lulla, M. Defoort, C. Blanc, O. Bourgeois, and E. Collin
Phys. Rev. Lett. Vol. **110**, 177206 (2013).

“Micro et nano mécanique : pour faire quoi ? Enjeux techniques & Scientifiques”
E. Collin, groupe UBT
Séminaire ITA – Néel, février 2013.

“Phonon Thermal Transport in Periodically Structured Nanosystems”
C. Blanc, K.J. Lulla, D. Taïnoff, H. Ftouni, Y. I. Liu, A. Rajabpour, S. Volz, T. Fournier, M. Defoort, E. Collin, O. Bourgeois
Phononics 2013, Egypt, june 2013.

47) “Modal ”self -coupling” as a sensitive probe for nanomechanical detection”
M. Defoort, K.J. Lulla, C. Blanc, O. Bourgeois, A.D. Armour, and E. Collin
Appl. Phys. Lett. Vol. **103**, pp. 013104 (2013).

48) “Modal Decomposition in Goalpost Micro/nano Electro-mechanical Devices”
E. Collin, M. Defoort, K.J. Lulla, C. Blanc, J. Guidi, S. Dufresnes, O. Bourgeois, H. Godfrin
QFS 2013 Matsue, Japan, 01 – 06 August 2013.
J. of low Temp. Phys. Vol. **175**, Issue 1, p. 442 (2014).

“Energy Dissipation in Nano-electro-mechanical Devices at Millikelvin Temperatures”

M. Defoort, K. J. Lulla, C. Blanc, O. Bourgeois, and E. Collin

QFS 2013 Matsue, Japan, 01 – 06 August 2013 (invited).

“Energy dissipation in nano-electro-mechanical devices at mK temperatures”

E. Collin,

Microkelvin meeting, Helsinki, Finland, 09 – 13 September 2013 (invited).

49) "Specific heat measurement of thin suspended SiN membrane from 8 K to 300 K using the 3ω -Völklein method"

Hossein Ftouni, Dimitri Tainoff, Jacques Richard, Kunal Lulla, Jean Guidi, Eddy Collin, and Olivier Bourgeois

Rev. Sci. Instrum. **84**, 094902 (2013).

« QNM – Quantum Nano Mechanics »

E. Collin

J3N Marseille, France, 04 – 06 novembre 2013.

« Micro/nano-mechanical cryogenic resonators: nonlinearities and energy dissipation »

E. Collin

Physics seminar, Lancaster University, UK, 06 décembre 2013.

“Micro/nano electro-mechanical cryogenic resonators”

E. Collin

Physics lecture

7 février 2014, Heidelberg, Germany.

50) "Electrical conductance of bolted copper joints for cryogenic applications"

F. Blondelle, A. Sultan, E. Collin, H. Godfrin

J. of Low. Temp. Phys. Vol. **175** (no 5/6), 877 (2014).

“Low Temperature Micro and Nano Electro-Mechanics”

E. Collin

Soutenance de HdR

Grenoble, 21 février 2014.

51) “Slippage and boundary layer probed in an almost-ideal gas by a nano-mechanical oscillator”

M. Defoort, K.J. Lulla, T. Crozes, O. Maillet, O. Bourgeois, and E. Collin

Phys. Rev. Lett. **113**, 136101 (2014); [arXiv:1512.02455](https://arxiv.org/abs/1512.02455).

Editor’s suggestion, <http://journals.aps.org/prl>.

“From Fermi liquid to Mott-Hubbard localization in 2D ^3He ”

H. Godfrin and E. Collin

ATOMS2014, Advanced Topics in Magnetism and Superconductivity

San Carlos de Bariloche, 31st of July - 4th of August (2014).

“Low temperature physics with nano-electro-mechanical systems”

E. Collin, M. Defoort, K.J. Lulla, O. Bourgeois, H. Godfrin

LT27, Buenos Aires, 6 - 13 August (2014).

“Fundamental nonlinear phenomena in nano-mechanical devices” (invité)

E. Collin, M. Defoort, K.J. Lulla and O. Bourgeois

ULT2014, San Carlos de Bariloche, 15-19 august 2014.

“Probing Bogoliubov QP in superfluid ^3He with a 'vibrating-wire like' MEMS device”

M. Defoort, S. Dufresnes, H. Godfrin and E. Collin (Institut Néel)

S.L. Ahlstrom, A. J. Woods, E.A. Guise, M. Poole and S.N. Fisher (ULANC)

ULT2014, San Carlos de Bariloche, 15-19 august 2014.

52) “Scaling laws for the bifurcation-escape rate in a nanomechanical resonator”

M. Defoort, V. Puller, O. Bourgeois, F. Pistolesi, and E. Collin

Phys. Rev. E **92**, 050903(R) (2015) Rapid Com; [arXiv:1409.6971](https://arxiv.org/abs/1409.6971).

“Low temperature physics with NEMS”

E. Collin

Séminaire de groupe, RHUL, Londres, 29 september 2014.

“Low temperature damping in a nano-electro-mechanical device”

E. Collin & O. Bourgeois

Néel Institute / Highlights 8 (Sept. 2014).

53) “Thermal conductivity of silicon nitride membranes is not sensitive to stress”

Hossein Ftouni, Christophe Blanc, Dimitri Tainoff, Andrew Fefferman, Kunal J. Lulla, Jacques Richard, Eddy Collin, and Olivier Bourgeois

Phys. Rev. B Vol. **92**, 125439 (2015); [arXiv:1506.01838](https://arxiv.org/abs/1506.01838).

“Cryogenic nano-electro-mechanical devices as model systems for classical issues in physics” (invité)

E. Collin

30 years of Quantronics Workshop, Paris-Diderot, 22-25 june 2015.

“Probing mesoscopic lengthscales in (super)fluid ^3He ” (invité)

E. Collin

Grand Challenges in QFS meeting, Buffalo (USA) 7-8 aout 2015.

“Mesoscopic nano-mechanical probes for quantum fluids & solids” (invité)

E. Collin, H. Godfrin, A. Fefferman,

International conference on QFS, Niagara Falls (USA) 9-15 aout 2015.

54) “Probing Bogoliubov quasiparticles in superfluid ^3He with a 'vibrating-wire like' MEMS device”

M. Defoort, S. Dufresnes, S.L. Ahlstrom, E.A. Guise, M. Poole, A.J. Wood, V. Tsepelin, S.N. Fisher, H. Godfrin and E.Collin

International conference on QFS, Niagara Falls (USA) 9-15 aout 2015.

J. of Low Temp. Phys. Vol. **183**, p. 284 (2016); [arXiv:1512.01033](https://arxiv.org/abs/1512.01033).

DOI : [10.1007/s10909-015-1392-9](https://doi.org/10.1007/s10909-015-1392-9)

55) “Classical decoherence in a nanomechanical resonator”

Olivier Maillet, Frantisek Vavrek, Andrew Fefferman, Olivier Bourgeois & Eddy Collin

New J. Phys. **18**, 073022 (2016); [arXiv:1511.02120v4](https://arxiv.org/abs/1511.02120v4).

“Elastic measurements of TLSs in amorphous silicon at mK temperatures”
A. Fefferman, E. Collin, Xiao Liu, Thomas Metcalf and Glenn Jernigan
Gordon Research Conference 6-11 march 2016, Ventura CA USA.

“Classical Decoherence in a Nanomechanical Resonator”
O. Maillet, F. Vavrek, A.D. Fefferman, O. Bourgeois and E. Collin
Gordon Research Conference 6-11 march 2016, Ventura CA USA.

“Elastic measurements of TLSs in amorphous silicon at mK temperatures”
A. Fefferman E. Collin, Xiao Liu, Thomas Metcalf and Glenn Jernigan
March meeting 14-18 march 2016, Baltimore MD USA.

“Classical Decoherence in a Nanomechanical Resonator”
O. Maillet, F. Vavrek, R. Gazizulin, A. Maldonado Cid, A.D. Fefferman, O. Bourgeois and E. Collin
March meeting 14-18 march 2016, Baltimore MD USA.

“Ultra-basse température, système modèle pour la physique fondamentale”
E. Collin
Journées du département MCBT, Villard de Lans 12-13 mai 2016.

“Nonlinear dynamics and fluctuations in (micro)nanomechanical systems”
E. Collin
Séminaire nanoélectronique quantique, Grenoble 31 mai 2016.

“Cryo. pour les Ultra-basses températures”
E. Collin
Alliance cryogénie LANEF, Grenoble 3 juin 2016.

“Nonlinearity-induced frequency fluctuations in a nanomechanical resonator”
O. Maillet, X. Zhou, A.-I. Maldonado-Cid, R. R. Gazizulin, A. D. Fefferman, O. Bourgeois, E. Collin
JMC15 Bordeaux 22-26 aout 2016.

“Nanomechanical beams for sub-coherence length studies in superfluid ^3He ” (invité)
E. Collin, R. Gazizulin, O. Maillet, A. Fefferman
QFS 2016, Prague, Rép Tchèque 10-16 aout 2016.

“Elastic measurements of TLSs in amorphous silicon at mK temperatures”
A. Fefferman, A. Maldonado-Cid and E. Collin, X. Liu, T. Metcalf and G. Jernigan
QFS 2016, Prague, Rép Tchèque 10-16 aout 2016.

56) “Elastic measurements of amorphous silicon films at mK temperatures”
A. Fefferman, A. Maldonado, E. Collin, X. Liu, T. Metcalf and G. Jernigan
J. of Low Temp. Phys. Vol. 187, pp 654 (2017); [arXiv:1610.06778](https://arxiv.org/abs/1610.06778).

“Boundary layer of gaseous ^4He and superfluid films probed by a nano- mechanical device at Kelvin temperatures”
R. R. Gazizulin, O. Maillet, A. I. Maldonado Cid, X. Zhou, T. Crozes, O. Bourgeois, A. D. Fefferman, E. Collin
QFS 2016, Prague, Rép Tchèque 10-16 aout 2016 (Last minute poster).

“Nano/micro mécanique aux ultra-basses températures”

E. Collin

GDR Opto-méca Q

Paris, Jussieu 20-21 sept 2016.

“MEMS and NEMS for Quantum fluids & Solids”

E. Collin

Cours CryoSchool Helsinki 26 Sept – 3 Oct. 2016 (cours invité).

“Interplay between amplitude fluctuations and nonlinear dynamics in NEMS”

E. Collin

FNS conference, La Thuile, Italy 05-10 february 2017 (invité).

“Boundary layer in ^4He gas and superfluid ^4He films probed by nano-mechanical oscillator”

R. Gazizulin, O. Maillet, A. I. Maldonado Cid, X. Zhou, T. Crozes, O. Bourgeois, A.

Fefferman and E. Collin,

FNS conference, La Thuile, Italy 05-10 february 2017.

“Elastic measurements of TLSs in amorphous silicon at mK temperatures”

A. Fefferman, A. Maldonado-Cid, and E. Collin, X. Liu, T. Metcalf and G. Jernigan

FNS conference, La Thuile, Italy 05-10 february 2017.

“Interplay between amplitude fluctuations and nonlinear dynamics in NEMS”

E. Collin,

Séminaire, 27 janvier 2017, Konstanz, Germany.

57) “Universality of thermal transport in amorphous nanowires at low temperatures”

Adib Tavakoli, Christophe Blanc, Hossein Ftouni, Kunal J. Lulla, Andrew D. Fefferman, Eddy Collin, and Olivier Bourgeois

Phys. Rev. B **95**, 165411 (2017); [arXiv:1703.08396](https://arxiv.org/abs/1703.08396).

“Interplay between amplitude fluctuations and nonlinear dynamics in NEMS”

E. Collin,

Workshop “Nanomechanics at low temperatures: from classical to quantum”, University of Nottingham UK, 11 April 2017.

58) “Non-linear Frequency Transduction of Nano-mechanical Brownian Motion”

Olivier Maillet, Xin Zhou, Rasul Gazizulin, Ana Maldonado Cid, Martial Defoort, Olivier Bourgeois, Eddy Collin,

Phys. Rev. B **96**, 165434 (2017); [arXiv:1704.06119](https://arxiv.org/abs/1704.06119).

59) “Temperature Dependent Energy Levels of Electrons on Liquid Helium”

E. Collin, W. Bailey, P. Fozooni, P. G. Frayne, P. Glasson, K. Harrabi, M. J. Lea,

Phys. Rev. B **96**, 235427 (2017); [arXiv:1707.02119](https://arxiv.org/abs/1707.02119).

“Nonlinear Frequency Transduction of Nanomechanical Brownian Motion”

O. Maillet, X. Zhou, A. I. Maldonado Cid, R. R. Gazizulin, A. D. Fefferman, O. Bourgeois & E. Collin,

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“On-chip mechanical thermometry at mK temperatures”

X. Zhou, R. R. Gazizulin, O. Maillet, A. D. Fefferman, E. Collin,
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“Non-linear Frequency Transduction of nanomechanical Brownian Motion”

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“On-chip phonon thermometry at mK temperatures”

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63) “Cryogenic broadband vibration measurement on a cryogen-free dilution refrigerator”

D. Schmoranzer, A. Luck, E. Collin, A. Fefferman

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74) “Electric circuit model of microwave optomechanics”

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77) “A macroscopic object passively cooled into its quantum ground state of motion: beyond single-mode cooling”

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78) “High-Q and high-Coupling gated silicon nitride drum resonators”

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“A macroscopic object in its quantum ground state of motion”

E. Collin

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79) “Microwave Optomechanically Induced Transparency and Absorption”

Sumit Kumar, Dylan Cattiaux, Eddy Collin, Andrew Fefferman and Xin Zhou

JLTP **210**, p. 562–572 (2023); [arXiv:2104.09208](#); DOI: 10.1007/s10909-022-02671-6.

“Microwave Optomechanically Induced Transparency and Absorption”

Sumit Kumar, Dylan Cattiaux, Eddy Collin, Andrew Fefferman, Xin Zhou

IOP meeting - New physics at low temperatures,

Online event 14 April 2021.

“A macroscopic object passively cooled to its quantum ground state of motion”

E. Collin, D. Cattiaux et al. (Invited)

IOP conference on Quantum Matter

20-21 July 2021 CMD29 Online Series.

“A 3 n Ω superconducting aluminum heat switch”

S. Triqueneaux, J. Butterworth, S. Midlik, I. Golokolenov, M. Phuthi, D. Schmoranzler, E. Collin, and A. Fefferman

QFS 2021, Bangalore, India, 9-14 August 2021.

“Microwave single-tone optomechanics in the classical regime”

I. Golokolenov, D. Cattiaux, S. Kumar, M. Sillanpää, L. Mercier de Lépinay, A. Fefferman, E. Collin

Aalto physics seminar, 12 August 2021.

“Micro/Nano Electro-Mechanics and Opto-mechanics at low temperatures”

E. Collin

Cryocourse, Grenoble – Chichilianne 20-28 Sept. 2021

80) “Fully suspended nano-beams for quantum fluids”

Ilya Golokolenov, Baptiste Alperin, Bruno Fernandez, Andrew Fefferman and Eddy Collin

JLTP **210**, p. 550–561 (2023); [arXiv:2111.05278](#); DOI: 10.1007/s10909-022-02722-y.

“Fully suspended nano-beams for quantum fluids”

Ilya Golokolenov, Baptiste Alperin, Bruno Fernandez, Andrew Fefferman and Eddy Collin

GDR mécaQ, 15-16 Novembre 2021 (Saclay, France).

“A macroscopic object in its quantum ground state of motion”

Prix Dylan Cattiaux, par le Dir. de thèse E. Collin

GDR MecaQ, 15-16 Novembre 2021 (Saclay, France).

81) “Superconducting aluminum heat switch with 3 nΩ equivalent resistance”
James Butterworth, Sébastien Triqueneaux, Simon Midlik, Ilya Golokolenov, Anne Gerardin, Thibaut Gandit, Guillaume Donnier-Valentin, M. Keith Phuthi, David Schmoranzer, Eddy Collin, and Andrew Fefferman
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GDR Méso, 29 Novembre – 2 Décembre 2021 (Aussois, France).

“A macroscopic object passively cooled to its quantum ground state of motion”
Eddy Collin
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82) “Mesoscopic Quantum Thermo-mechanics: a new frontier of experimental physics”
E. Collin
AVS Quantum Sci. **4**, 020501 (2022); [arXiv:2204.09451](https://arxiv.org/abs/2204.09451); <https://doi.org/10.1116/5.0086059>.

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Eddy Collin
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83) “Experimental evaluation of thermal rectification in a ballistic nanobeam with asymmetric mass gradient”
Adib Tavakoli, Jeremie Maire, Boris Brisuda, Thierry Crozes, Jean-François Motte, Laurent Saminadayar, Eddy Collin & Olivier Bourgeois,
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84) “Nanomechanical damping via electron-assisted relaxation of two-level systems”
Olivier Maillet, Dylan Cattiaux, Xin Zhou, Rasul R. Gazizulin, Olivier Bourgeois, Andrew D. Fefferman, and Eddy Collin,
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85) “Capacitively coupled distinct mechanical resonators for room temperature phonon-cavity electromechanics”
Alok Pokharel, Hao Xu, Srisaran Venkatachalam, Eddy Collin, Xin Zhou
Nano Lett. Vol. **22**, 7351 (2022); DOI:10.1021/acs.nanolett.2c01848; [arXiv:2204.04641](https://arxiv.org/abs/2204.04641).

86) “Specific heat of thin phonon cavities at low temperature: Unexpectedly high values revealed by zeptojoule calorimetry”
Adib Tavakoli, Kunal J. Lulla, Tuomas Puurtinen, Ilari Maasilta, Eddy Collin, Laurent Saminadayar, and Olivier Bourgeois
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87) “Thermodynamics of a single mesoscopic phononic mode”
Ilya Golokolenov, Arpit Ranadive, Luca Planat, Martina Esposito, Nicolas Roch, Xin Zhou, Andrew Fefferman, and Eddy Collin
Phys. Rev. Research **5**, 013046 (2023); [arXiv:2208.08395](https://arxiv.org/abs/2208.08395).

“Development of continuous refrigeration for passive ground-state cooling of mechanical resonators”

James Butterworth, Sébastien Triqueneaux, Matthias Raba, Šimon Midlik, Ilya Golokolenov, David Schmoranzner, Eddy Collin and Andrew Fefferman
Gordon Conference Ventura, USA 19-24 Juin 2022.

“Single-tone microwave optomechanics: from classical to quantum”

I. Golokolenov, D. Cattiaux, S. Kumar, M. Sillanpää, L. M. de Lépinay, R.R. Gazizulin, X. Zhou, A.D. Armour, O. Bourgeois, A. Fefferman & E. Collin
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“A macroscopic object passively cooled into its quantum ground state of motion”

Dylan Cattiaux, Ilya Golokolenov, Sumit Kumar, Mika Sillanpää, Laure Mercier de Lépinay, Rasul Gazizulin, Xin Zhou, Andrew D. Armour, O. Bourgeois, Andrew Fefferman and Eddy Collin (invited)
LT29, 18-24 aout 2022, Sapporo, Japan.

“Stochastic Thermodynamics of a Single Nano-Mechanical Mode”

I. Golokolenov, A. Ranadive, L. Planat, M. Esposito, N. Roch, X.Zhou, A. Fefferman, E. Collin
LT29, 18-24 aout 2022, Sapporo, Japan.

“Breaking the millikelvin barrier for on-chip electrons”

Francis Bettsworth, Samuli Autti, Richard Haley, Alexander Jones, Jonathan Prance, Michael Thompson, Eddy Collin and Olivier Bourgeois
ULT2022, 25-28 aout 2022, Otaru, Japan.

“Development of continuous sub-mK refrigeration for ground-state cooling of mechanical resonators”

James Butterworth, Sébastien Triqueneaux, Matthias Raba, Šimon Midlik, Ilya Golokolenov, David Schmoranzner, Eddy Collin and Andrew Fefferman
ULT2022, 25-28 aout 2022, Otaru, Japan.

88) “On the link between mechanics and thermal properties: mechanothermics”

Eddy Collin, Ilya Golokolenov, Olivier Maillet, Laurent Saminadayar & Olivier Bourgeois
New J. of Physics Vol. **25**, 043008 (2023). [ArXiv: 2211.15106](https://arxiv.org/abs/2211.15106).

“Stochastic Thermodynamics of a Single Nano-Mechanical Mode”

I. Golokolenov, A. Ranadive, L. Planat, M. Esposito, N. Roch, X.Zhou, A. Fefferman, E. Collin
CMD29 21-26 aout 2022, Manchester, UK

“Self-oscillation regime of a nano beam NEMS at low temperatures”

Alexandre Delattre, Ilya Golokolenov, Andrew Fefferman and Eddy Collin
JMC 22-26 aout 2022, Lyon France.

“Low temperature optomechanical measurement of dielectrically-driven non-metallized SiN Strings”

B. Alperin, S. Kumar, Y. Klass, H. Xu, S. Venkatachalam, X. Zhou, E. Weig, E. Collin, and A. Fefferman.
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“Single Mesoscopic Phononic Mode Thermodynamics”

I. Golokolenov, A. Ranadive, L. Planat, M. Esposito, N. Roch, X.Zhou, A. Fefferman, E. Collin

EMP User meeting, High Tatras, 18-22 September 2022, Slovakia.

“Single Mesoscopic Phononic Mode Thermodynamics”

I. Golokolenov, A. Ranadive, L. Planat, M. Esposito, N. Roch, X.Zhou, A. Fefferman, E. Collin

GDR MecaQ Bordeaux, 06-07 octobre 2022, France.

“Self-oscillation regime of nano-beam based opto-mechanical systems”

A. Delattre, I. Golokolenov, A. Fefferman, E. Collin

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89) “Nano-beam clamping revisited”

Ilya Golokolenov, Sumit Kumar, Baptiste Alperin, Bruno Fernandez, Andrew Fefferman, and Eddy Collin

J. of Appl. Phys. Vol. **133**, 124302 (2023) ; [arXiv:2211.01617](https://arxiv.org/abs/2211.01617).

90) “Developing compact tuning fork thermometers for sub-mK temperatures and high magnetic fields”

A.J. Woods, A.M. Donald, R. Gazizulin, E. Collin, and L. Steinke

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Preface to Special Issue JLTP “Mechanics at Low Temperatures”

Eddy Collin & Mika Sillanpää

Journal of Low Temperature Physics Vol. **210**, p. 537–538 (2023).

“In-equilibrium thermodynamics and ground-state fluctuations of a mesoscopic mechanical object”

E. Collin

Aalto physics seminar, Espoo, Finland, 13 Avril 2023

“Self-oscillation regime of nano-opto-mechanical systems”

E. Collin, A. Delattre, I. Golokolenov, A. Fefferman, E. Collin

NMN conference, TIMA Grenoble, 30-31 mai 2023.

“In-equilibrium thermodynamics of a mesoscopic mechanical object: towards the quantum ground-state”

E. Collin, invited

FNS Delft, Netherlands 6-9 June 2023

“Development of continuous sub-mK refrigeration for ground-state cooling of mechanical resonators”

James Butterworth, Sébastien Triqueneaux, Matthias Raba, Šimon Midlik, Ilya Golokolenov, David Schmoranzer, Eddy Collin, A. Fefferman

FNS Delft, Netherlands 6-9 June 2023

“Anomalous nonlinear features in the self-oscillation regime of microwave optomechanical devices”

A. Delattre, Ilya Golokolenov, Xin Zhou, Andrew Fefferman, Eddy Collin
FNS Delft, Netherlands 6-9 June 2023

“Investigation of the location of tunneling two level systems and the role of normal-state electrons in nanoelectromechanical resonators”

B. Alperin, G. Julié, E. Collin, A. Fefferman
FNS Delft, Netherlands 6-9 June 2023

“In-equilibrium thermodynamics of a mesoscopic mechanical object: towards the quantum ground-state”

E. Collin, invited
EMP User Meeting, Lancaster UK 13-15 June 2023

“JRA4: Advancing nanoscience capabilities at ultra-low temperatures”

E. Collin,
EMP User Meeting, Lancaster UK 13-15 June 2023

“Fully suspended mechanical probes for quantum fluids”

I. Golokolenov, S. Kumar, B. Alperin, B. Fernandez, A. Fefferman, E. Collin
QFS 2023 Manchester, UK, 9-15 august 2023

“Microwave optomechanics and cryogen-free nuclear demagnetization refrigeration”

Andrew Fefferman, James Butterworth, Eddy Collin, Alexandre Delattre, Ilya Golokolenov, Richard Pedurand, Matthias Raba, Sébastien Triqueneaux
QFS 2023 Manchester, UK, 9-15 august 2023

91) “Self-sustained optomechanical state destruction triggered by the Kerr nonlinearity”

A. Delattre, I. Golokolenov, R. Pedurand, X. Zhou, A. Fefferman and E. Collin
Phys. Rev. Research Vol. 6, 043038 (2024). [arXiv:2403.03509](https://arxiv.org/abs/2403.03509)

“Nanomechanical drums with high quantum coherence at temperatures near 1 mK”

Richard Pedurand, Amir Youssefi, Eddy Collin, Tobias Kippenberg, Andrew Fefferman
GDR MécaQ, Lille (France), 9-10 October 2023

“Anomalous nonlinear features in the self-oscillation regime of microwave optomechanical devices”

A. Delattre, Ilya Golokolenov, Xin Zhou, Andrew Fefferman, Eddy Collin
GDR MécaQ, Lille (France), 9-10 October 2023

92) “Progress toward detection of individual TLS in nanomechanical resonators”

Richard Pedurand, Ilya Golokolenov, Mika Sillanpää, Laure Mercier de Lépinay, Eddy Collin, Andrew Fefferman
J. of Low Temp. Phys. **215** (5-6), pp. 440-451 (2024). [arXiv:2401.07327](https://arxiv.org/abs/2401.07327)

“Fully suspended nanomechanical beams for probing quantum fluids”

Eddy Collin, Ilya Golokolenov
Nanofab Membrane’s day, Néel Grenoble 9/11/2023

“Low temperature Micro-nano Mechanics”

E. Collin

Néel-Delft meeting, Grenoble, 16 January 2024

“In-equilibrium thermodynamics and ground-state fluctuations of a mesoscopic mechanical object”

E. Collin

Nottingham physics seminar, Nottingham, UK, 28 May 2024

93) “Imaging nanomechanical vibrations and manipulating parametric mode coupling using scanning microwave microscopy”

Hao Xu, Srisaran Venkatachalam, Toky-Harrison Rabenimanana, Christophe Boyaval, Sophie Eliet, Flavie Braud, Eddy Collin, Didier Theron, Xin Zhou

Nano Letters **24** (28), pp. 8550-8557 (2024)

94) “Aluminum nuclear demagnetization refrigerator for powerful continuous cooling”

Matthias Raba, Sébastien Triqueneaux, James Butterworth, David Schmoranzler, Emilio Barria, Jérôme Debray, Guillaume Donnier-Valentin, Thibaut Gandit, Guillaume Gay, Anne Gerardin, Johannes Goupy, Olivier Tissot, Eddy Collin, and Andrew Fefferman

Phys. Rev. Applied **22**, 024027 (2024); [arXiv:2404.19352](https://arxiv.org/abs/2404.19352)

“Towards single phonon counting”

A. Delattre, I. Golokolenov, A. Fefferman, E. Collin

CMD31, Braga Portugal, 01-06 September 2024

“TWPA characterization for quantitative quantum experiments : an optomechanics case”

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GDR MecaQ, 30sept/1er Octobre, Grenoble 2024

“Towards single phonon counting”

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“Nanomécanique à basse température”

E. Collin

Nanofab EBL Day, Néel Grenoble 5 novembre 2024.

BREVETS :

- D.Vion, D. Estève, P. Joyez, H. Pothier, P.F. Orfila, C. Urbina, E. Collin, et G. Ithier. “*Dispositif de réinitialisation de bits quantiques à deux états d’énergie*”. Demande N° 04805408.4-1225-FR2004002864, déposée le 08-11-2004 par le CEA.
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