



AOSOC 2000



**Applied
Superconductivity
Conference**

Technology for the 21st Century

Pre-Conference
Booklet

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4EA08 Integrated Superconducting Receiver as 400-600 GHz Tester For Coolable Devices*

S.V. Shitov, V.P. Koshelets, G.V. Prokopenko, L.V. Filippenko, A.B. Ermakov, Institute of Radio Engineering and Electronics, Russian Academy of Sciences, Moscow, Russia; A.M. Shtanyuk, Institute of Applied Physics, Russian Academy of Sciences, Nizhny Novgorod, Russia; M. Levitchev, H. Kohlstedt, Institute of Thin Film and Ion Technology, Research Center Juelich, Germany; A.V. Veretennikov, Institute of Solid State Physics, Russian Academy of Sciences, Chernogolovka, Russia; A.V. Ustinov, Physics Institute III, University of Erlangen-Nuremberg, Erlangen, Germany.

4EA09 High Resolution Superconducting Tunnel Junction X-Ray Detector

S. Friedrich, O. Drury, M. Frank, S.E. Labov, Lawrence Livermore National Laboratory; S.P. Cramer, Lawrence Berkeley National Laboratory.

4EA10 A data acquisition system for test and control of superconducting integrated receivers

A. B. Ermakov, V. P. Koshelets, S. V. Shitov, Institute of Radio Engineering and Electronics, Moscow, Russia; A. M. Baryshev, W. Luinge, SRON-Groningen, Groningen, the Netherlands.

4EA11 Digital Readout Electronics For Arrays Of Superconducting Transition Edge Sensors

Sae Woo Nam, Gene Hilton, Dave Wollman, Jay Chervenak, Kent Irwin, Steve Deiker, John Martinis, NIST.

4EA12 A 200-300 GHz single sideband SIS mixer for radio telescope receivers

Alexandre Karpov, Caltech, USA ; Jacques Blondel, Dominique Billon-Pierron, Karl-Heinz Gundlach, IRAM, France.

4EB Miscellaneous Electronics

4EB01 Heat Sources in Electronic Refrigerators

Bostjan Jug, Zvonko Trontelj, Faculty of Mathematics and Physics, University of Ljubljana.

4EB02 Advanced Stirling cryogenic unit for cooling of a highly sensitive HTS/Hall-magnetometer used in a system for non-destructive evaluation

G. Kaiser, A. Binneberg, Institut für Luft- und Kältetechnik, Fachbereich Kryotechnik; S. Linzen, P. Seidel, Institut für Festkörperphysik, Friedrich-Schiller-Universität Jena.

4EB03 Sidelobe Suppression in Normal distribution-shaped Superconducting Tunnel Junctions

Katsuya Kikuchi, Takeshi Iizuka, Hiroaki Myoren, Susumu Takada, Faculty of Engineering, Saitama University.

4EB04 Self-radiation of Josephson junctions with the log-periodic antenna of high-temperature superconducting films

Kwang-Yong Kang, Jeong-Dae Suh, Seok-Kil Han, Ho-Young Kim, Electronics and Telecommunications Research Institute; Min-Hwan Kwak, KyungSang University.

4EB05 Quantum Roulette Noise Thermometer: Progress and Prospects

R. A. M. Lee, L. Hao, D. A. Peden, J. C. Gallop, National Physical Laboratory, Teddington, TW11 0LW; J. C. Macfarlane, E. J. Romans, University of Strathclyde, Glasgow, G4 0NG.

4EC Other SQUID Applications

4EC01 SQUID Detection of Magnetic Fields Produced by Chemical Reactions

James Claycomb, Wanda LeGrand, John H. Miller, Jr., University of Houston, Department of Physics and Texas Center for Superconductivity; Mikael Nerseyan, James Ritchie, Dan Luss, University of Houston, Department of Chemical Engineering.

4EC02 SQUID-Detected Nuclear Quadrupole Resonance

Robert McDermott, John Clarke, UCB Physics and LBNL.

4EC03 The High-TC RF-SQUID Magnetometer With a Copper Flux Transformer

Nicolai I. Firsov, Ilya L. Novikov, Radmir F. Khusnutdinov, Sergei B. Kvasov, Novosibirsk State Technical University.

4EC04 Integrated Cryogenic Current Comparators with dc SQUID readout for SET amplification

E. Bartolome, J. Flokstra, H. Rogalla, Low Temperature Division, Dep. Applied Physics, Univ. Twente, The Netherlands; A. Canon, C. Rillo, J. Sese, ICMA, CSIC-Univ. Zaragoza, Spain; G. Rietveld, NMI Van Swinden Lab., Dep. Electricity and Magnetism, The Netherlands.

4EC05 High Tc SQUID Gradiometer for Mobile Magnetic Anomaly Detection

T. Clem, D. Overway, J. Purpura, Naval Surface Warfare Center; R. Koch, G. Keefe, IBM ; J. Rozen, IBM.

4EC06 Electronic Gradiometer Using HTS SQUIDS with Very Fast Feedback Electronics

A. N. Matlashov, M. A. Espy, R. H. Jr. Kraus, Los Alamos National Laboratory, Los Alamos, NM 87545 ; K. R. Ganther, L. D. Snapp, Honeywell Federal Manufacturing & Technologies, Kansas City, MO 64141.

4EC07 Improved direct-coupled SQUID read-out electronics with automatic bias voltage tuning

D. Drung, S. Bechstein, K.-P. Franke, M. Scheiner, Th. Schurig, Physikalisch-Technische Bundesanstalt, 10587 Berlin, Germany.

4EC08 Magnetic Detection of a Surface Ship Using an Airborne LTS SQUID MAD

Megumi Hirota, Takashi Furuse, Kazunori Ebana, Hiroshi Kubo, Kouhaku Tsushima, TRDI, Japan Defense Agency; Takayuki Inaba, Akihiro Shima, Masakatsu Fujinuma, Naoyuki Tojyo, Kamakura Works, Mitsubishi Electric Co..

4EC09 Peculiarities of the HTS SQUID Magnetometer Application in Geophysical TEM Measurements.

G. Panaitov, M. Bick, Y. Zhang, FZI, Germany.

4EC10 Gigahertz band HTS SQUID amplifier

A.S. Kalabukhov, O.V. Snigirev, Physics Department, Moscow State University, 119899 Moscow, Russia; M.A. Tarasov, Z.G. Ivanov, Chalmers University of Technology, Department of Microelectronics, SE-412 96 Goteborg, Sweden; S.I. Krasnovobodtsev, Lebedev Institute of Physics, Russian Academy of Sciences, 117924 Moscow, Russia; E.A. Stepanov, Institute of Crystallography, Russian Academy of Sciences, 117333 Moscow, Russia.

4EC11 A HTS SQUID Picovoltmeter with Improved Noise Immunity

Jakob Blomgren, Dag Winkler, Chalmers University of Technology; Thomas Eriksson, ABB Corporate Research.

4EC12 HTS dc SQUID systems for geomagnetic prospection

V. Zakosarenko, A. Chwala, J. Ramos, R. Stoltz, V. Schultze, H.-G. Meyer, IPHT Jena, Dept. of Cryoelectronics, P.O.Box 217, D-07702 Jena, Germany; D. Kretschmar, T. Radic, Technical University Berlin.

4EC13 Microwave induced steps in RF-Field-Driven dc SQUID and its potential applications

T. Kondo, Sendai National College of Technology and CREST JST; Y. Mizugaki, J. Chen, K. Nakajima, RIEC Tohoku University and CREST JST; K. Saito, RIEC Tohoku University; T. Yamashita, NICHe Tohoku University and CREST JST.

4EC14 Active Supercurrent Control in Superconductor/Ferromagnet Heterostructures.

R J Kinsey, G Burnell, M G Blamire, IRC in Superconductivity, University of Cambridge, UK.