

**PAPERS PUBLISHED BY THE SUPERCONDUCTING MAGNET DIVISION,  
2003-2005.**

Most of these papers have been presented at one of three conferences: the U.S. Particle Accelerator Conference (PAC), the International Conference on Magnet Technology (MT), and the Applied Superconductivity Conference (ASC). The papers are later published in IEEE Journals. Papers to the MT and ASC meetings are refereed before publication.

**MAGNET DIVISION PUBLICATIONS – CALENDAR YEAR 2005**

Dynamic stability threshold in high-performance internal-tin Nb<sub>3</sub>Sn superconductors for high field magnets, A K Ghosh, E A Sperry, L D Cooley, A M Moodenbaugh, R L Sabatini and J L Wright, BNL, Supercond. Sci. Technol. 18 L5-L8, January 2005

Novel Method of Compensation of the Effects of Detector Solenoid on the Vertical Beam Orbit in a Linear Collider, B. Parker and A. Seryi, published in Phys. Rev. Special Topics, 1 April 2005, <http://link.aps.org/abstract/PRSTAB/v8/e041001>

PAC05 (May 16-20, Knoxville):

“Test Results of HTS Coils and an R&D Magnet for RIA,” R. Gupta, M. Anerella, M. Harrison, J. Schmalzle, W. Sampson, A. Zeller (MSU)

“Optimization of Open Midplane Dipole Design for LHC IR Upgrade,” R. Gupta, M. Anerella, A. Ghosh, M. Harrison, J. Schmalzle, P. Wanderer, N. Mokhov (FNAL)

“Test Results for LHC Insertion Region Dipole Magnets,” J. Muratore, A. Jain, M. Anerella, J. Cozzolino, G. Ganetis, A. Ghosh, R. Gupta, M. Harrison, A. Marone, S. Plate, J. Schmalzle, R. Thomas, P. Wanderer, E. Willen, K.C. Wu

“Superconducting Helical Snake Magnet for the AGS,” E. Willen, M. Anerella, J. Escallier, G. Ganetis, A. Ghosh, R. Gupta, M. Harrison, A. Jain, A. Luccio, W. MacKay, A. Marone, J. Muratore, S. Plate, T. Roser, N. Tsoupas, P. Wanderer

“Recent Test Results of the Fast-Pulsed 4 T Cos $\theta$  Dipole GSI 001” G. Moritz et al. (including Escallier, Ganetis, Jain, Marone, Muratore, Thomas, Wanderer)

“Compact Superconducting Final Focus Magnet Options for the ILC,” B. Parker, M. Anerella, J. Escallier, M. Harrison, P. He, A. Jain, A. Marone, K. C. Wu, BNL and T. Markiewicz, T. Maruyama, Y. Nosochkov, A. Seryi, SLAC.

“Serpentine Coil Topology for BNL Direct Wind Superconducting Magnets,” B. Parker, J. Escallier.

“Development of Superconducting Combined Function Magnets for the Proton Transport Line for the J-PARC Neutrino Experiment,” T. Nakamoto et al. (including Anerella, Ganetis, Gupta, Harrison, Jain, Muratore, Parker, Wanderer),

Parker, He, and Gupta are also coauthors on papers not listed here.

19<sup>th</sup> Intn'l Conf. Magnet Technology, September 19-23, Genoa, Italy

“Exotic Magnets for Accelerators,” P. Wanderer (invited)

“Measurements of the Field Quality in Superconducting Dipoles at High Ramp Rates,” Animesh Jain, John Escallier, George Ganetis, Wing Louie, Andrew Marone, Richard Thomas, Peter Wanderer

Magnetic Measurements: IMMW, September 26-29, Geneva

Jain – fast-ramp magnet measuring system

Jain – BEPC large sextupole due to bore tube

Nanobeam05, October 17-21, Kyoto (Proceedings are to be published.)

“Recent Progress Designing Compact Superconducting Final Focus Magnets for the ILC,” B. Parker.

“Vibration Measurements in a RHIC Quadrupole at Cryogenic Temperatures,” A. Jain, S. Aydin, P. He, M. Anerella, G. Ganetis, M. Harrison, B. Parker, S. Plate

## **MAGNET DIVISION PUBLICATIONS – CALENDAR YEAR 2004**

Workshop on Accelerator Magnet Superconductors (WAMS04), March 22-24,  
Archamps, France

Cable Design for Fast-Ramped Superconducting Magnets (Cos- $\theta$  Design), A. K. Ghosh

EPAC04 - July

Field mapping in the AGS Warm Snake

J. Takano, R. Alforque, R. Belkin, G. Ganetis, T. Hattori, A. Jain, W. W.

MacKay, M. Okamura, T. Roser, R. Thomas, J. E. Tuozzolo

Acceleration Of Polarized Beams Using Multiple Strong Partial Siberian Snakes\*, T. Roser, L. A. Ahrens, M. Bai, E. D. Courant, J. W. Glenn, R. C. Gupta, H. Huang, A. U. Luccio, W. W. MacKay, N. Tsoupas, E. Willen, BNL, Upton, NY 11973, USA, and M. Okamura, J. Takano, RIKEN, Japan

ASC04 - October

Magnetic Field Measurements For Fast-Changing Magnetic Fields

A. Jain, G. Ganetis, W. Louie, A. Marone, R. Thomas, P. Wanderer

Radiation Resistant HTS Quadrupoles for RIA

R. Gupta, M. Anerella, M. Harrison, W. Sampson, J. Schmalzle, BNL, R.M. Ronningen and A. Zeller, MSU.

Optimum Integral Design for Maximizing the Field in Short Magnets

R. Gupta

Development of 10kA class long length Bi-2212 Rutherford Cable

J. Nishioka, Y. Hikichi, N. Ohtani, T. Hasegawa, Showa Electric; R. M. Scanlan, D. Dietderich, LBNL; R. Gupta, BNL; N. Hirano, S. Nagaya, Chubu Electric

Investigation of Instability in High  $J_c$  Nb<sub>3</sub>Sn Strands

A. K. Ghosh, L.D. Cooley, A. R. Moodenbaugh

Magnetization Studies of High  $J_c$  Nb<sub>3</sub>Sn Strands

A. K. Ghosh, L. D. Cooley, A. R. Moodenbaugh, BNL; J. Parrell, M.B. Field, Y. Zhang, S. Hong, Oxford Superconducting Technology

Superconducting Combined Function Magnet System for J-PARC Neutrino Experiment.

T. Ogitsu et al.

Critical Current Measurement of Nb<sub>3</sub>Sn Rutherford-type Cables for High Field Accelerator Magnets

G. Ambrosio, Fermilab; D. Dietderich, LBNL; A. Ghosh, BNL; A. Verweij, CERN

Interstrand Resistances in Cored Rutherford-Type Superconducting Cables

Rainer Soika and Arup K. Ghosh

*Cryogenics*, Vol. 45/2, p. 149-154 (2004)

## **MAGNET DIVISION PUBLICATIONS – CALENDAR YEAR 2003**

### ***RHIC HELICAL***

PAC03: PERFORMANCE SUMMARY OF THE HELICAL MAGNETS FOR RHIC\*

E. Willen, M. Anerella, J. Escallier, G. Ganetis, A. Ghosh, R. Gupta, M. Harrison, A. Jain, W. MacKay, A. Marone, J. Muratore, S. Plate, R. Thomas, P. Wanderer and KC Wu, BNL, Upton, NY 11973, USA

M. Okamura, RIKEN, Japan

### ***AGS SUPERCONDUCTING SNAKE***

PAC03: MAGNETIC DESIGN OF A SUPERCONDUCTING AGS SNAKE\*

R. Gupta, A. Luccio, G. Morgan, W. Mackay, K. Power, T. Roser, E. Willen, BNL, M. Okamura, RIKEN, Japan.

PAC03: ENGINEERING OF THE AGS SNAKE COIL ASSEMBLY\*

M. Anerella, R. Gupta, P. Kovach, A. Marone, S. Plate, K. Power, J. Schmalzle, E. Willen, BNL.

### ***AGS – OTHER***

PAC03: INJECTION ACCELERATION AND EXTRACTION OF HIGH INTENSITY PROTON BEAM FOR THE “NEUTRINO FACILITY” PROJECT AT BNL\*

Nicholaos Tsoupas, James Alessi, Donald Barton, Kevin Brown, George Ganetis, Animesh Jain, Yung Lee, Wuzheng Meng, Deepak Raparia, Thomas Roser, Alessandro Ruggiero, Joseph Tuozzolo, Peter Wanderer, Bill Weng BNL

### ***SNS:***

PAC03: FINAL TEST RESULTS FOR THE SNS RING DIPOLES\*

P. Wanderer†, J. Jackson, A. Jain, Y.-Y. Lee, W. Meng, Y. Papaphilippou#, C. Spataro, S. Tepikian, N. Tsoupas, J. Wei, BNL, Upton, NY 11973-5000, USA

PAC03: SNS RING AND TRANSPORT SYSTEM MAGNET ACCEPTANCE AND INSTALLATION PREPARATION\*

S. Tepikian, R. Anderson, M. Hemmer, H. C. Hseuh, J. Jackson, A. Jain, F. Karl, Y. Y. Lee, W. McGahern, D. Raparia, R. Savage, J. Tuozzolo, P. Wanderer, J. Wei, BNL

### ***GSI***

PAC03: INITIAL TEST OF A FAST-RAMPED SUPERCONDUCTING MODEL DIPOLE FOR GSI'S PROPOSED SIS200 ACCELERATOR \*

P. Wanderer†, M. Anerella, G. Ganetis, A. Ghosh, P. Joshi, A. Marone, J. Muratore, J. Schmalzle, R. Soika, R. Thomas BNL, Upton, NY 11973-5000, USA

J. Kaugerts, G. Moritz, GSI, Darmstadt, Germany  
W. Hassenzahl, Advanced Energy Analysis, Piedmont, CA 94611 USA  
M. N. Wilson, consultant, 33 Lower Radley, Abingdon OX14 3AY, UK

MT18: CALCULATION AND MEASUREMENT OF ENERGY LOSS IN A MODEL  
DIPOLE FOR GSI'S PROPOSED SIS200 SYNCHROTRON,

M. N. Wilson, consultant, 33 Lower Radley, Abingdon OX14 3AY, UK  
M. Anerella, G. Ganetis, A. Ghosh, P. Joshi, A. Marone, J. Muratore, J. Schmalzle, R.  
Soika, R. Thomas, P. Wanderer, BNL, Upton, NY 11973-5000, USA  
J. Kaugerts, G. Moritz, GSI, Darmstadt, Germany  
W. Hassenzahl, Advanced Energy Analysis, Piedmont, CA 94611 USA

### **e-RHIC**

PAC03: ELECTRON-ION COLLISIONS AT RHIC USING A HIGH INTENSITY  
SELF-POLARIZING ELECTRON RING

Vadim Ptitsyn, Jorg Kewisch, Brett Parker, Stephen Peggs, Dejan Trbojevic BNL ,  
Dmitry E. Berkaev, Ivan A. Koop, Alexei V. Otboev, Yuri M. Shatunov BINP , Desmond  
P. Barber DESY , Chris Tschalaer, Fuhua Wang, Jan B. van der Laan MIT-Bates

### **J-PARC**

MT18: SUPERCONDUCTING MAGNET SYSTEM AT THE 50 GEV PROTON  
BEAM LINE FOR THE J-PARC NEUTRINO EXPERIMENT

Toru Ogitsu, Yasuo Ajima, Tomiyoshi Haruyama, Norio Higashi, Yosuke Iwamoto,  
Atsuko Ichikawa, Masanori Kawai, Nobuhiro Kimura, Takashi Kobayashi, Yoshinari  
Kondou, Yasuhiro Makida, Tatsushi Nakamoto, Hirokatsu Ohhata, Takakazu Shintomi,  
Minoru Takasaki, Ken-ichi Tanaka, Akio Terashima, Akira Yamamoto, KEK  
Michael Anerella, John Escallier, Ramesh Gupta, George Ganetis, Michael  
Harrison, Animesh Jain, Joe Muratore, Brett Parker, Peter Wanderer, BNL

MT18: DESIGN OF SUPERCONDUCTING COMBINED FUNCTION MAGNETS AT  
THE 50 GEV PROTON BEAM LINE FOR THE J-PARC NEUTRINO EXPERIMENT

Tatsushi Nakamoto, Norio Higashi, Akio Terashima, Toru Ogitsu, Yasuo Ajima,  
Atsuko Ichikawa, Yosuke Iwamoto, Nobuhiro Kimura, Takashi Kobayashi,  
Takakazu Shintomi, Ken-ichi Tanaka, Akira Yamamoto, KEK  
Michael Anerella, Ramesh Gupta, Michael Harrison, Peter Wanderer, BNL

### **LHC, LARP**

MT18: OPEN MIDPLANE DIPOLE DESIGN FOR LHC IR UPGRADE,

R. Gupta, M. Anerella, M. Harrison and J. Schmalzle, BNL and N. Mokhov, FNAL

## ***HTS CONDUCTOR AND MAGNETS***

MT18: STATUS OF HIGH TEMPERATURE SUPERCONDUCTOR MAGNET R&D AT BNL, R. Gupta, M. Anerella, J. Cozzolino, J. Escallier, G. Ganetis, A. Ghosh, M. Harrison, A. Marone, J. Muratore, W. Sampson and P. Wanderer

## ***SUPERCONDUCTOR R&D***

ICMC03 Topical Conference: V-I TRANSITION AND n-VALUE OF MULTIFILAMENTARY LTS AND HTS WIRES AND CABLES, A. Ghosh

CEC/ICMC03: FIXTURE FOR SHORT SAMPLE TESTING OF VLHC-CLASS HEP NB<sub>3</sub>SN STRANDS, R. Soika, L.D. Cooley, A.K. Ghosh, A. Werner, BNL

## ***MAGNETIC FIELD MEASUREMENTS***

IMMW13: MEASUREMENT ACTIVITIES IN THE BNL MAGNET DIVISION  
A. Jain, G. Ganetis, A. Marone, J. Muratore, R. Thomas, P. Wanderer

IMMW13: DEVELOPMENT OF A PROBE FOR HARMONIC MEASUREMENTS AT VERY HIGH RAMP RATES

A. Jain, G. Ganetis, A. Marone, J. Muratore, R. Thomas, P. Wanderer

MT18: DEVELOPMENT OF A PRECISE MAGNETIC FIELD MEASUREMENT SYSTEM FOR FAST-CHANGING MAGNETIC FIELDS

P. Wanderer, G. Ganetis, A. Jain, W. Louie, A. Marone, R. Thomas

## ***PERMANENT MAGNETS***

MT18: PERMANENT MAGNET DESIGNS WITH LARGE VARIATIONS IN FIELD STRENGTH, R. Gupta

Conference abbreviations:

PAC03: 2003 Particle Accelerator Conference, May 12-16, 2003, Portland, Oregon

MT18: The 18<sup>th</sup> International Conference on Magnet Technology, October 20-24, 2003, Morioka, Japan

ICMC03 Topical Conference: International Cryogenic Materials Conference, May 25-28, 2003, Enschede, The Netherlands

CEC/ICMC 2003, Anchorage, AK, September 22-26, 2003.

IMMW13: 13<sup>th</sup> International Magnet Measuring Workshop, May 19 – 22, 2003, Stanford CA (powerpoint presentations)