



**42<sup>nd</sup> ICFA Advanced Beam Dynamics Workshop on High-Intensity,  
High-Brightness Hadron Beams (HB2008)  
August 24-29, 2008**

**Agenda**

**Sunday, August 24**

**Symphony Ballroom Foyer, Lobby Level**

- 1630-1930 On-site Registration
- 1700-1900 Workshop Overview and Reception .....Stuart Henderson, Chair, ORNL

**Monday, August 25**

**Plenary Session**

**Symphony I/II, Lobby Level**

- 0830-0840 Welcome .....Stuart Henderson, Chair, ORNL
- 0840-0915 Beam Intensity Challenges at the Spallation  
Neutron Source .....John Galambos, ORNL
- 0915-0950 Status of J-PARC Commissioning.....Hideaki Hotchi, J-PARC
- 0950-1025 Intensity Upgrade Plans for the CERN/LHC  
Injector Complex.....Elena Shaposhnikova, CERN

**1025-1050**

**Coffee Break**

- 1050-1125 High-Intensity Challenges of the FAIR Project .....Oliver Boine-Frankenheim, GSI
- 1125-1200 Project X as a Way to Intensity Frontier Physics.....Giorgio Apollinari, FNAL
- 1200-1235 The State of the Art in Hadron Beam Cooling.....Lionel Prost, FNAL

**1230-1400**

**Lunch**

**Working Group A: Beam Dynamics in High-Intensity Circular Machines**

Conveners: Rick Baartman (TRIUMF), Giuliano Franchetti (GSI), Elias Métral (CERN)

**Carmichael/McTyeire**

- 1400-1430 Impedance and Instability Issues of the J-PARC Rings .....Yong-Ho Chin, J-PARC
- 1430-1450 Transverse Mode Coupling Instability in the CERN SPS:  
Comparing HEADTAIL Simulations with Beam  
Measurements .....Benoit Salvant, EPFL University
- 1450-1510 Measurement of the Transverse Resistive-Wall  
Impedance of a LHC Graphite Collimator at  
Low Frequency .....Federico Roncarolo, Cockcroft Inst./  
Univ. of Manchester
- 1510-1530 Crossing Transition at RHIC .....Vadim Ptitsyn, BNL

**1550-1610**

**Coffee Break**

- 1610-1640 Effect of Space Charge on Instabilities .....Valeri Lebedev, FNAL
- 1640-1700 Coherent Synchro-Betatron Resonance in the Booster .....Alexey Burov, FNAL
- 1700-1720 Simulation Study of Transverse Coherent Instabilities in  
Intense Bunches with Space Charge and Image Currents ...Vladimir Kornilov, GSI



**Monday, August 25 (continued)**

**Working Group A: Beam Dynamics in High-Intensity Circular Machines** (continued)

Conveners: Rick Baartman (TRIUMF), Giuliano Franchetti (GSI), Elias Métral (CERN)

**Carmichael/McTyeire**

- 1720-1740 Simulation Studies of the Interplay Between Space-Charge and Impedance Effects for Project X .....James Amundson, FNAL

**Working Group D: Commissioning, Operations and Performance**

Conveners: John Galambos (ORNL), Mike Seidel (PSI), Tadashi Koseki (KEK)

**Kirkland/Calhoun**

- 1400-1430 High Power Proton Beam Operations at PSI .....Mike Seidel, PSI
- 1430-1500 Transition from Commissioning to Operation in the J-PARC Linac .....Masanori Ikegami, J-PARC
- 1500-1530 The SNS Power Ramp-Up Experience .....John Galambos, ORNL
- 1530-1600 Operational Experience with High Beam Powers at ISIS...David Findlay, ISIS

**1550-1610**

**Coffee Break**

- 1610-1640 High Power Operational Experience with the LANSCE Linac .....Larry Rybarcyk, LANL
- 1640-1710 High Power Operational Experience of the AGS and Booster .....Deepak Raparia, BNL
- 1710-1740 Fermilab Main Injector High Power Operation and Future Plans .....Bruce Brown, FNAL
- 1740-1810 Beam Cleaning and Beam Loss Control at LHC .....Thomas Weiler, CERN

**Poster Session**

**1730-1900 Skylight Foyer**

**Working Group A: Beam Dynamics in High-Intensity Circular Machines**

- Beam Dynamics Limits for Low-Energy RHIC Operation .....Alexei Fedotov, BNL
- Effects of Initial Particle Distributions on the Creation and Propagation of Halos in Intense Beams .....Christos Papadopoulos, U. of MD
- Simulation of Coherent Electron Cooling for High-Intensity Hadron Colliders.....David Bruhwiler, Tech-X
- Measurements and Corrections of the Recycler Linear Lattice at Fermilab .....Meiqin Xiao, FNAL
- Coupling and Its Effects on Beam Dynamics .....Valeri Lebedev, FNAL
- Orbit Response Matrix Analysis Applied at SNS Ring .....Zhengzheng Liu, Indiana University

**Working Group B: Beam Dynamics in High-Intensity Linacs**

- Phase Damping in the SNS Linac .....Yan Zhang, ORNL
- IMPACT Simulation and the SNS Linac Beam .....Yan Zhang, ORNL

**Working Group C: Accelerator System Design, Injection, Extraction, Collimation**

- Efficiency and Robustness of the PS2 Collimation System .....Yannis Papaphilippou, CERN
- Comparison of Carbon Stripper Foils Under Operational Conditions at the Los Alamos Proton Storage Ring.....Thomas Spickermann, LANL



**Monday, August 25 (continued)**

**Poster Session (continued)**

**1730-1900 Skylight Foyer**

**Working Group C: Accelerator System Design, Injection, Extraction, Collimation (continued)**

- 3D Simulation Studies of Beam Dynamic Issues in SNS Ring Injection and Extraction .....Jian-Guang Wang, ORNL

**Working Group D: Commissioning, Operations and Performance**

- European Spallation Source.....Iratxe Ariz, Fundación Tekniker
- A Superconducting Proton Linac for the ESS-Bilbao Accelerator .....Ibon Bustinduy, Univ. of Basque Ctry.

**Working Group E: High-Intensity Linacs and Rings**

None

**Working Group F: Beam Diagnostics and Instrumentation for High-Intensity Beams**

- Extracting Information Content Within Noisy, Sampled Profile Data from Charged Particle.....Chris Allen, ORNL

**Tuesday, August 26**

**Working Group B: Beam Dynamics in High-Intensity Linacs**

Conveners: Alexander Aleksandrov (ORNL), Ingo Hofmann (GSI), Jean-Michel Lagniel (GANIL)

**Carmichael/McTyeire**

- 0830-0900 LINAC Beam Dynamics Codes: State of the Art and Perspectives.....Rob Ryne, LBNL
- 0900-0930 Simulation of Experiments on Transverse rms-Emittance Growth Along an Alvarez DTL.....Lars Groening, GSI
- 0930-0950 Simulations of High-Intensity Beams Using BG/P Supercomputer at ANL .....Jin Xu, ANL
- 0950-1010 Using Online Single Particle Model for SNS Accelerator Tuning .....Andrei Shishlo, ORNL

**1020-1040**

**Coffee Break**

- 1040-1110 Recent Beam Studies of the SNS Linac.....Yan Zhang, ORNL
- 1110-1140 Measurement and Simulations of the J-PARC Linac.....Masanori Ikegami, J-PARC
- 1140-1230 Discussion: Simulation and Operating Linacs.....All

**1230-1400**

**Lunch**

**Working Group F: Beam Diagnostics and Instrumentation for High-Intensity Beams**

Conveners: Manfred Wendt (FNAL), Takeshi Toyama (KEK)

**Kirkland/Calhoun**

- 0830-0857 SNS Optical Projects and Laser Profile Monitor System ....Saeed Assadi, ORNL
- 0858-0924 Beam Instrumentation for Future High-Intensity Hadron Accelerators at Fermilab.....Manfred Wendt, FNAL
- 0925-0952 Beam Loss Monitoring Using Proportional Counters at J-PARC .....Takeshi Toyama, KEK



**Tuesday, August 26 (continued)**

**Working Group F: Beam Diagnostics and Instrumentation for High-Intensity Beams (continued)**

Conveners: Manfred Wendt (FNAL), Takeshi Toyama (KEK)

**Kirkland/Calhoun**

0952-1020 SNS Beam Loss Monitor System Overview: Detectors,  
Measurements, Simulations .....Alexander Zhukov, ORNL

**1020-1040 Coffee Break**

1040-1107 Fermilab Booster Diagnostics, Monitors and Software  
For Operational Control of Residual Radiation.....Bill Pellico, FNAL

1108-1134 Computation of Space-Charge Effect in Allison Scanner  
and its Application to the Measurement of Emittance.....Timofey Gorlov, ORNL

1135-1202 Beam Diagnostics at the RAL Front-End Test Stand-  
First Results and New Ideas .....Jürgen Pozimski, Imperial College

1203-1230 HEBT Diagnostics for Commissioning, Control and  
Characterization of the IFMIF-EVEDA .....Ivan Podadera-Aliseda, CIEMAT

**1230-1400 Lunch**

**Working Group A: Beam Dynamics in High-Intensity Circular Machines**

Conveners: Rick Baartman (TRIUMF), Giuliano Franchetti (GSI), Elias Métral (CERN)

**Carmichael/McTyeire**

1400-1430 Instability Observations in the SNS Accumulator Ring .....Sarah Cousineau, ORNL

1430-1450 Electron-Cloud Build-up Simulations for FNAL Main  
Injector .....Miguel Furman, LBNL

1450-1510 Recent Observations, Experiments and Simulations  
of Electron Cloud Effects at the Los Alamos Proton  
Storage Ring .....Bob Macek, LANL

1510-1530 Electron Cloud Studies in FNAL Main Injector .....Robert Zwaska, FNAL

**1550-1610 Coffee Break**

1610-1640 Space Charge and Resonances in High-Intensity Beams  
(Linac + Ring).....Ingo Hofmann, GSI

1640-1700 Emittance Growth Scaling Laws in Resonance Crossing.....Xiaoying Pang, Indiana Univ.

1700-1720 Measurements and Simulations of Beam Loss with  
Space Charge in the GSI Synchrotron SIS-18.....Giuliano Franchetti, GSI

1720-1740 State of the Art of High-Intensity Simulation Codes:  
New Algorithms and Methods for Rings.....Andreas Adelman, PSI

**Working Group E: High-Intensity Linacs and Rings**

Conveners: Peter Ostroumov (ANL), Frank Gerigk (CERN)

**Kirkland/Calhoun**

1400-1422 eRHIC Conceptual Design .....Vadim Ptitsyn, BNL

1423-1445 ELIC Conceptual Design .....Yuhong Zhang, JLab

1446-1508 The R&D Status for China Spallation Neutron Source  
Linac .....Sheng Wang, IHEP



**Tuesday, August 26 (continued)**

**Working Group E: High-Intensity Linacs and Rings (continued)**

Conveners: Peter Ostroumov (ANL), Frank Gerigk (CERN)

**Kirkland/Calhoun**

- 1509-1531 The Superconducting SIS 100 Synchrotron for High-Intensity Proton and Heavy Ion Beams .....Peter Spiller, GSI
- 1531-1553 Project X Beam Physics Issues .....Valeri Lebedev, FNAL

**1550-1610 Coffee Break**

- 1610-1632 Lattice Options for PS2 .....Yannis Papaphillippou, CERN
- 1633-1655 Choice of Frequency, Gradient, and Temperature for a Superconducting Proton Linac .....Frank Gerigk, CERN
- 1655-1717 Comparison of Proton Driver Schemes for Muon Collider and Neutrino Factory .....Charles Ankenbrandt, FNAL
- 1718-1740 Overview and Status of the Fermilab High-Intensity Neutrino Source R&D Program .....Bob Webber, FNAL
- 1740-1802 High-Intensity Beams with FFAGs .....Akio Sato, Osaka University

**Wednesday, August 27**

**Working Group A: Beam Dynamics in High-Intensity Circular Machines**

Conveners: Rick Baartman (TRIUMF), Giuliano Franchetti (GSI), Elias Métral (CERN)

**Carmichael/McTyeire**

- 0830-0900 Simulation of Resonances and Beam Loss for the J-PARC Main Ring .....Alexander Molodzhentsev, J-PARC
- 0900-0920 Evolution Beam Parameters During Injection, Acceleration and Storage of the High Brightness Beams Envisaged for the Linac4 Injection into the PS Booster.....Michel Martini, CERN
- 0920-0940 High-Intensity Effects in the SNS Accumulator Ring.....Jeff Holmes, ORNL
- 0940-1000 Space Charge and High-Intensity Studies on ISIS .....Christopher Warsop, RAL

**1020-1040 Coffee Break**

- 1040-1110 IBS Suppression Lattice in RHIC: Theory and Experimental Verification .....Alexei Fedotov, BNL
- 1110-1130 Achievable Space-Charge Tune Shift with Long Lifetime in the CERN PS and SPS .....Elias Métral, CERN
- 1130-1150 Space Charge Effect in Isochronous Rings .....Eduard Pozdeyev, BNL
- 1150-1210 Resonance Analysis of Beams with Intense Space Charge in the University of Maryland Electron Ring (UMER).....Chao Wu, Univ. of Maryland

**1230-1400 Lunch**



**Wednesday, August 27 (continued)**

***Working Group D: Commissioning, Operations and Performance***

Conveners: John Galambos (ORNL), Mike Seidel (PSI), Tadashi Koseki (KEK)

**Kirkland/Calhoun**

- 0830-0900 Activation of Targets and Accelerator Components at  
PSI—a Comparison of Simulation and Measurement .....Daniela Kiselev, PSI
- 0900-0930 Residual Does Rate Analyses for the SNS Accelerator  
Facility .....Irina Popova, ORNL
- 0930-1000 Beam Commissioning of J-PARC Main Ring .....Tadashi Koseki, J-PARC
- 1000-1030 The NumI Beam at Fermilab: Successes and Challenges ....Sam Childress, FNAL
- 1020-1040** ***Coffee Break***
- 1040-1110 SNS Beam Commissioning Tools and Experience .....Andrei Shishlo, ORNL
- 1110-1230 Discussion and Summary .....All

**1230-1400 Lunch**

***Working Group C: Accelerator System Design, Injection, Extraction, Collimation***

Conveners: Deepak Raparia (BNL), Sarah Cousineau (ORNL)

**Carmichael/McTyeire**

- 1400-1430 SNS Injection and Extraction Systems Issues and  
Solutions .....Mike Plum, ORNL
- 1430-1500 Experience with J-PARC Injection and Extraction  
Systems .....Pranab Saha, J-PARC
- 1500-1530 Future Prospects for Laser Stripping Injection in  
High-Intensity Machines .....Viatcheslav Danilov, ORNL
- 1530-1600 Challenges Associated with 8 GeV Injection in the  
Fermilab Project X Proton Driver .....David Johnson, FNAL

**1550-1610** ***Coffee Break***

- 1620-1650 Lifetime Measurement of HBC Foil and Nanocrystalline  
Diamond Foil by use of the KEK 650 KeV High-  
Intensity DC H- Ion Beam .....Isao Sugai, KEK
- 1650-1800 Discussion .....All

**1900-2100** **BANQUET, Symphony III**

**“The Hunt for Supermassive Black Holes: Where They**

**Live, What They Eat, and Why We Need Them” .....Dr. Kelly Holley-Bockelmann**

**Assistant Professor of Astronomy, Vanderbilt University and Fisk University (adjunct)**

***Working Group F: Diagnostics and Instrumentation for High-Intensity Beams***

Conveners: Manfred Wendt (FNAL), Takeshi Toyama (KEK)

**Kirkland/Calhoun**

- 1400-1427 Status and Implementation of Wideband Feedback  
System for e-p Instabilities in Long Bunch Proton  
Machines .....Craig Deibele, ORNL
- 1428-1454 Beam Diagnostics at ISIS .....Steve Payne, RAL



**Wednesday, August 27 (continued)**

**Working Group F: Diagnostics and Instrumentation for High-Intensity Beams (continued)**

Conveners: Manfred Wendt (FNAL), Takeshi Toyama (KEK)

**Kirkland/Calhoun**

1455-1522 Beam Diagnostic System of the Main Ring Synchrotron  
of the J-PARC.....Kenichirou Satou, J-PARC

1523-1550 Beam Diagnostics Required to Safely Transport and  
Target a 2-MW, 120-GeV Proton Beam .....Sam Childress, FNAL

**1550-1610 Coffee Break**

**Working Group E: High-Intensity Linacs and Rings**

Conveners: Peter Ostroumov (ANL), Frank Gerigk (CERN)

**Kirkland/Calhoun**

1610-1632 Heavy Ion Accelerators for RIKEN RI Beam Factory  
and Upgrade Plans .....Hiroki Okuno, RIKEN

1633-1655 The Korean Proton Engineering Frontier Project .....Ji-Ho Jang, KAERI

1655-1717 The 40-MeV Proton/Deuteron SC Linac at SARAF.....Dan Berkovits, SOREQ

1718-1740 Compact Linac for Deuterons .....Larry Rybarcyk, LANL

1740-1802 High-Gradient Test of SC Single-Spoke Resonators  
for HINS .....Bob Wagner, FNAL

**1900-2100 BANQUET, Symphony III**

**“The Hunt for Supermassive Black Holes: Where They  
Live, What They Eat, and Why We Need Them” .....Dr. Kelly Holley-Bockelmann  
Assistant Professor of Astronomy, Vanderbilt University and Fisk University (adjunct)**

**Thursday, August 28**

**Working Group B: Beam Dynamics in High-Intensity Linacs**

Conveners: Alexander Aleksandrov (ORNL), Ingo Hofmann (GSI), Jean-Michel Lagniel (GANIL)

**Carmichael/McTyeire**

0830-0900 Physics Design of Front Ends for Superconducting  
Ion Linacs .....Peter Ostroumov, ANL

0900-0930 Konus Beam Dynamics Designs Using H-Mode  
Cavities .....Rudolf Tiede, Goethe University

0930-1000 Prediction of a  $4\nu=1$  Resonance of a High-Intensity  
Linac .....Dong-O Jeon, ORNL

1000-1020 Investigation of the Beam Dynamics Layout of the  
FAIR Proton Injector .....Gianluigi Clemente, GSI

**1020-1040 Coffee Break**

1040-1110 Beam Dynamics in LINAC4 at CERN .....Frank Gerigk, CERN

1110-1130 Lattice Beam Dynamics Study at Low-Beta for  
SARAF/EURISOL Driver 40/60 MeV, 4 mA d/p  
Superconducting Linac .....Jacob Rodnizki, SOREQ NRC

1130-1230 Discussion: New Developments in Beam Dynamics  
in Linacs.....All

**1230-1400 Lunch**



Thursday, August 28 (continued)

**1230-1400 Working Lunch—Institutional Representatives by Invitation Only—Neely**  
**“Meeting of the International Advisory Committee for the**  
**High-Intensity High-Brightness Workshop Series”**

**Working Group A: Beam Dynamics in High-Intensity Circular Machines**

Conveners: Rick Baartman (TRIUMF), Giuliano Franchetti (GSI), Elias Métral (CERN)

**Kirkland/Calhoun**

- 0830-0850 Landau Damping of Space-Charge Dominated  
Fermilab Booster Beam ..... King B. Ng, FNAL
- 0850-0910 Modeling High-Intensity Beam in Cyclotron..... Jianjun Yang, Tsinghua Univ.
- 0910-0930 Simulation of Space-Charge Effects in an FFAG  
Using PTC..... Dan Abell, Tech-X
- 0930-1020 Discussion ..... All

**1020-1040 Coffee Break**

**Working Group D: Commissioning, Operations and Performance**

Conveners: John Galambos (ORNL), Mike Seidel (PSI), Tadashi Koseki (KEK)

**Kirkland/Calhoun**

- 1040-1230 Discussion and Summary ..... All

**1230-1400 Lunch**

**Joint Session: Working Groups A+B+E**

**Carmichael/McTyeire**

- 1400-1427 The Beam Dynamics Design for the China Spallation  
Neutron Source RCS..... Sheng Wang, IHEP
- 1428-1454 Development of Large-Scale Optimization Tools for  
Beam Tracking Codes ..... Brahim Mustapha, ANL
- 1455-1522 Megawatt Upgrades for the ISIS Facility ..... John Thomason, RAL
- 1522-1550 Discussion ..... All

**1550-1610 Coffee Break**

- 1610-1800 Discussion: Beam Dynamics ..... All

**Joint Session: Working Groups D+F**

**Kirkland/Calhoun**

- 1400-1550 Discussion: Operations and Beam Diagnostics ..... All

**1550-1610 Coffee Break**

**Working Group C: Accelerator System Design, Injection, Extraction, Collimation**

Conveners: Deepak Raparia (BNL), Sarah Cousineau (ORNL)

**Kirkland/Calhoun**

- 1610-1640 J-PARC Collimation System Experience ..... Kazami Yamamoto, J-PARC
- 1640-1710 Performance of the New FNAL Main Injector  
Collimation System ..... Bruce Brown, FNAL





**Thursday, August 28 (continued)**

**Working Group C: Accelerator System Design, Injection, Extraction, Collimation**

Conveners: Deepak Raparia (BNL), Sarah Cousineau (ORNL)

**Kirkland/Calhoun**

- 1710-1740 Collimation of H-Beam Transverse Halo by  
Triplet and Foil Scraping at CSNS.....Jingyu Tang, CSNS
- 1740-1800 Discussion .....All

**Friday, August 29**

**Closing Plenary Session**

**Symphony I/II, Lobby Level**

- 0830-0905 Summary of Working Group A
- 0905-0940 Summary of Working Group B
- 0940-1005 Summary of Working Group C

**1005-1030**

**Coffee Break**

- 1030-1105 Summary of Working Group D
- 1105-1130 Summary of Working Group E
- 1130-1150 Summary of Working Group F

1150-1200 Closing Remarks.....Stuart Henderson, Chair, ORNL

**1230---**      **Bus Leaves for SNS Tour**

**ACKNOWLEDGEMENTS:  
A Special Thanks to our Sponsors**

*HP-Homan's  
Muons, Inc.*

**Thank you for participating in the  
42<sup>nd</sup> ICFA Advanced Beam Dynamics Workshop on High-Intensity,  
High-Brightness Hadron Beams (HB2008)**