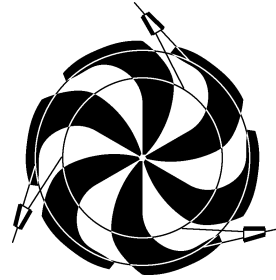


# TRIUMF



## ANNUAL REPORT SCIENTIFIC ACTIVITIES 1997

CANADA'S NATIONAL MESON FACILITY  
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UNIVERSITY OF TORONTO

UNDER A CONTRIBUTION FROM THE  
NATIONAL RESEARCH COUNCIL OF CANADA

APRIL 1998

*The contributions on individual experiments in this report are outlines intended to demonstrate the extent of scientific activity at TRIUMF during the past year. The outlines are not publications and often contain preliminary results not intended, or not yet ready, for publication. Material from these reports should not be reproduced or quoted without permission from the authors.*

**SEMINARS\***

The following seminars were presented at TRIUMF this year.

- 02/01 *Status of Supersymmetry*, John Ng, TRIUMF.
- 16/01 *CP- and T-Violation at CPLEAR*, Lukas Schaller, U. Fribourg.
- 23/01 *First Measurement of the Induced Proton Polarization from the  $^{12}\text{C}(e, e'p)$  Reaction*, Rhett Woo, U. Manitoba.
- 30/01 *Virtual Compton Scattering off the Nucleon*, Germar Knoechlein, U. Mainz.
- 04/02 *Nucleosynthesis and Neutrino Physics*, Christian Cardall, UC, San Diego.
- 06/02 *News from Fission: from LOHENGRIN to PIAFE*, Ulli Koester, TU München.
- 11/02 *QCD Thermodynamics with an Improved Lattice Action*, Matthew Wingate, U. Colorado.
- 13/02 *Stalking SUSY—Role of High Energy Colliders*, John Ng, TRIUMF.
- 14/02 *Dispersion Relation and Nucleon Strangeness*, Hans-Werner Hammer, U. Washington.
- 17/02 *The REX-ISOLDE Project: Energetic Radioactive Beams at CERN*, Piet van Duppen, Katholic U. Leuven.
- 18/02 *Mesons of a Chiral Effective Lagrangian at  $T > 0$* , Gregory Carter, U. Minnesota.
- 20/02 *On Atoms, Antiatoms and Traps*, Avivi I. Yavin, Tel Aviv U.
- 21/02 *New Approaches in Experimental Nuclear Astrophysics: LUNA and ERNA*, Claus Rolfs, Ruhr U. Bochum.
- 24/02 *Search for T-Violation in the  $K^+ \rightarrow \pi^0 \nu$  Decay: Status of the KEK-E246 experiment*, Jun Imazato, KEK.
- 27/02 *Neutrino Propagation Through a Fluctuating Sun*, Denis Michaud, McGill U.
- 28/02 *Symmetrization Selection Rules and Gluonic Excitations*, Philip Page, TJNAF.
- 04/03 *Two Topics on  $SU(2)$  Heavy Baryon Chiral Perturbation Theory*, Aalok Misra, U. Rochester.
- 12/03 *The RHIC Spin Project*, Thomas Roser, AGS Department, BNL.
- 13/03 *Shaping SUSY Models—Role of Low Energy Experiments*, John Ng, TRIUMF.
- 17/03 *Muon Catalyzed Fusion: Ideas and Applications*, Leonid Ponomarew, Kurchatov Institute, Moscow.
- 20/03 *The Holifield Radioactive Ion Beam Facility at Oak Ridge: Present Capabilities and Future Promises*, Jerry Garret, ORNL.
- 24/03 *Measurement of the Running of the Electromagnetic Coupling*, Ilan Levine, Purdue U.
- 03/04 *Improved Measurement of PNC in Atomic Cesium and the Nuclear Anapole Moment*, Christopher Wood, NIST, Boulder.
- 10/04 *Studies at the Proton Drip-Line: New Isotopes, New Isomeres, and Beta-Delayed Decays*, Bertram Blank, CEN Bordeaux & MSU.
- 14/04 *The Superconducting Heavy-Ion Linac and Samples of Research Activities at the University of Washington Nuclear Physics Laboratory*, Derek Storm, U. Washington.
- 17/04 *Experiments Determining the Pion-Nucleon Sigma Term*, Greg Smith, TRIUMF.
- 13/05 *The Japanese Hadron Facility*, Yoshitaka Kuno, KEK.
- 28/05 *The Plans for the Japan Hadron Facility (JHF)*, Shoji Nagamiya, KEK.
- 30/05 *Neutrino Energy Loss in Stellar Interiors*, Naoki Itoh, Sophia U., Tokyo.
- 04/06 *The 221 MeV TRIUMF Proton-Proton Parity Violation Experiment*, Des Ramsey, TRIUMF.
- 04/06 *Tune In, Turn On, Drop Down or Planting Rice in the Antarctic Icecap or Whatever Happens to All Those Antennas that Disappear from New Cars*, Dave Besson, U. Kansas.
- 05/06 *Gluonic Excitations, Glueballs and Hybrid Mesons*, Colin Morningstar, UC, San Diego.
- 05/06 *Status of the SLAC-Based B Factory Machine and Detector*, Jonathan Dorfan, SLAC.
- 10/06 *Open Problems at the Interface Between Heavy Flavours QCD and Hadron Spectroscopy*, Harry Lipkin, Weizmann Institute.
- 12/06 *Big Brother IS Watching You—Airborne Radioactivity Monitoring at UBC for the Test Ban Treaty*, David Measday, UBC.
- 24/06 *Rare K-Decays: New Results*, Mike Zeller, Yale U.
- 26/06 *Polarized  $H^-$  Ion Source Development at TRIUMF*, Phil Levy, TRIUMF.
- 03/07 *Reaction-Rate Sensitivity of the Nucleosynthesis of  $^{44}\text{Ti}$* , Brad Meyer, Clemson U.
- 08/07 *CP Violation*, Mike Scadron, U. Arizona.
- 22/07 *Spin-Structure of the Nucleon*, Vernon Hughes, Yale U.
- 24/07 *GaAs Detectors for X-Rays and Ionizing Particles*, Jens Ludwig, U. Freiburg.
- 31/07 *Rare Muon Processes*, Hans-Christian Walter, PSI.
- 07/08 *Heavy Water: A Brief History*, Chris Waltham, UBC.
- 19/08 *Experimental Search for the  $K_L \rightarrow \pi^+ \pi^- e^+ e^-$  Decay Mode—Results from E162 at KEK*, Noboru Sasao, Kyoto U.
- 20/08 *New Result in Search for  $K^+ \rightarrow \pi^+ \nu \bar{\nu}$* , Joseph Mildemberger, TRIUMF.
- 22/08 *Search for Solar or Cosmic Axions*, Konstantin Zioutas, U. Thessaloniki.

- 19/09 *Intrinsic Charm in B-Decays and Proton Spin*, Igor Halsperin, UBC.
- 25/09 *The Standard Model from Noncommutative Geometry—Ideas and Main Results*, Florian Scheck, U. Mainz.
- 02/10 *The Nucleon and the Nucleus—A Brisk Tour d’Horizon*, Sir Denys Wilkinson, U. Sussex.
- 03/10 *Parity Violation in Hadronic Systems*, Bertrand Desplanques, U. Joseph Fourier, Grenoble.
- 14/10 *The Strong, the Weak, and the Coulomb*, Erich Ormand, Louisiana State U.
- 16/10 *QED as Seen from the Light Cone*, Billy Jones, TRIUMF.
- 31/10 *The Light-Ion Spin Synchrotron (LISS) Project at IUCF*, Will Jacobs, IUCF.
- 06/11 *GEANT4: Status and Plans*, Johannes Peter Wellisch, TRIUMF.
- 13/11 *Exploring the Strangeness Content of the Nucleon via Parity Violation at JLab*, Lawrence Lee, U. Manitoba.
- 19/11 *Microscopic Structures of Light Halo Nuclei*, Steven Karataglidis, TRIUMF.
- 21/11 *Quantum Monte Carlo Calculation for Light Nuclei*, Robert B. Wiringa, ANL.
- 27/11 Westcott Memorial Lecture *Measuring  $K^+ \rightarrow \pi^+ \nu \bar{\nu}$* , Paul Bergbush, TRIUMF.
- 28/11 *Recent Developments in Microstrip Gas Detectors with Novel Multiplying Elements for Tracking at High Luminosities*, Archana Sharma, GSI & CERN.
- 09/12 *Nobel Methods of Atom Cooling: the NanoKelvin Era*, Otto Hausser, TRIUMF/SFU.
- 10/12 *Precision Spectroscopy Using Optical Modulators*, W.A. van Wijngaarden, York U.
- 16/12 *Investigation of Semileptonic B Meson Decays to P-Wave Charm Mesons*, Alain Bellerive, McGill U./CLEO-II.

The following TRIUMF 5 Year Plan seminars were presented at TRIUMF this year.

- 21/07 *Muon Dreams*, Jess Brewer, UBC.
- 06/08 *A Tau-Charm Factory Update*, James Pinfold, U. Alberta.  
*TRIUMF and the Tau-Charm Factory*, Peter Kitching, U. Alberta.
- 11/09 *The Push for ISL in the U.S.A. / Options for TRIUMF*, John D’Auria, SFU.
- 18/11 *Prospects for a Muon Blow-Torch and NMEC (Next Muon-Electron-Conversion Experiment) at TRIUMF*, Douglas Bryman, TRIUMF.
- 20/11 *TRIUMF at JHF?*, Arthur Olin, TRIUMF.
- 21/11 *Neutron Sources for Materials Research from the Canadian Perspective*, Thomas Mason, U. Toronto.
- 24/11 *Life Science Input to 5 Year Plan Round*, T. Ruth, TRIUMF.
- 25/11 *ATLAS and Particle Physics at TRIUMF—The Next 5 Years*, Chris Oram, TRIUMF.
- 26/11 *Second Generation Experiments on Condensed Matter at ISAC*, Rob Kiefl, UBC.
- 02/12 *A LISS Type Machine and an e-p Collider*, Stan Yen and Mike Vetterli, TRIUMF.

The following lunchtime seminars were presented at TRIUMF this year.

- 20/10 *Report on Real Time ’97 Conference and Update on Midas, the New TRIUMF DAQ System*, Renee Poutissou and Pierre Amaudruz, TRIUMF.
- 01/12 *A Report on the Muon Collider Workshop*, Glen Marshall, TRIUMF.

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\* All matters concerning TRIUMF seminars should be referred via E-mail to SEMINAR (seminar@triumf.ca).

You can see the latest listing of TRIUMF seminars by the following methods.

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| On the TRIUMF VAX cluster:          | Type SEMinars (SEM is sufficient)   |
| Via DECNET:                         | COPY LIB1:[PUBLIC.ANONYMOUS.SEMINAR]SEMINARS.TXT  |
| Via Anonymous FTP to FTP.TRIUMF.CA: | GET the file SEMINARS.TXT in the directory SEMINAR  |
| On the WWW:                         | See TRIUMF Seminars Schedule under the section General on the TRIUMF – Around the Laboratory page |
|                                     | Document URL: <a href="http://www.triumf.ca/seminars.txt">http://www.triumf.ca/seminars.txt</a>   |