

Curriculum Vitae

- A. Personal Data:** Name: Georg Peter Berg
Date of Birth: 1st August 1944
Place of Birth: Deutsch Krone, Germany
Citizenship: U.S.A.
Father: Martin Berg
Mother: Maria Berg
Wife: Shanta K. Berg
Children: Iris E. Berg - 8/10/1970
Stefan G. Berg - 4/29/1973
Philip C. Berg - 3/18/1980
Mohan M. Berg - 3/4/1994
- B. Education:** Summer 1964 High School Graduation, Physics studies started at Universities of Goettingen and later Cologne
Spring 1968 Vordiplom, University of Goettingen
March 9, 1972 Diplom in Physics, University of Cologne
July 13, 1974 Ph.D. in Physics (Dr. rer.nat.), University of Cologne
- C. Positions:**
- 1974-1975 Research Scientist , University of Cologne, Germany: Research with Tandem Accelerator, proton scattering, radiation safety.
- 1975-1976 Research Associate, University of Wisconsin, Madison: Research with Tandem and polarized ions, light ion transfer reactions, operation of ion source, Tandem, and nuclear equipment, alignment of tandem column, polarimeter design.
- 1976-1978 Research Scientist, Commissariat d'Energie Nucleaire, CEA, Saclay, France: Research with Tandem and QDDM spectrometer, heavy ion transfer reactions, commissioning and operation of spectrometer.
- 1978-1986 Research Scientist, Forschungszentrum Juelich (former KFA), Germany: Commissioning of high resolution spectrometer BIG KARL and research, M1 spin-flip states, giant resonances, transfer reactions, 0 degree operation, atomic charge transfer, Delbrueck scattering, Dispersion matching techniques, design focal plane detector, Design study and successful proposal for Cooler Storage Ring COSY project for which I served as project leader for two years.
- 1986- 2001 Cyclotron professional at IUCF, Commissioning and developing K600 Spectrometer (1986-1988), Group Leader Experimental Facilities (1988-1994), Cooler Injector Synchrotron project (1994-1998), Proton Therapy project 1998-2001.
- 2001 - 2002 COE Visiting Professor RCNP, Osaka University, (Design and

commissioning WS course, High resolution (3He,t) studies, Start astrophysics program for rp-process).

2002 - 2004 Senior Scientist, KVI, University of Groningen, (Design and commissioning of TRI μ P Fragment Separator for the study of trapped radioactive beams).

2005 - present Visiting Research Professor, Joint Institute of Nuclear Physics and the Department of Physics, University of Notre Dame, (Design of St. George, a new Recoil Separator to study (p, γ) and (α , γ) of astrophysics interest at low energies in inverse kinematics.)

D. Leave of Absence, Scholarships, Projects, Committees

Scientific Secretary, IUCF Program Advisory Committee from 1988 to 1994.

Consultation in technical projects. CEBAF Hall A HRS Mapper Review Committee: December 14 -15, 1992. At several occasions presentations at MSU to consult in facilities upgrade and research program.

Nov. 18, 1994 to Dec.15, 1994 at RCNP as Guest Scientist sponsored by the Japanese Society for the Promotion of Science. (JSPS ID#JS95178), study of high resolution capability of Grand Raiden and related beam line.

Dec. 18, 1996 to March 21, 1997, Visiting professor at RCNP sponsored by the COE (Center of Excellence) program of the Japanese Government. Proposal for matched WS beam line to improve the Grand Raiden resolution to its design limit.

March 1, 2000 to Feb. 28, 2001, Visiting professor at RCNP sponsored by the COE program of the Japanese Government. Successful commissioning of WS beam line, development, proposals and start of high resolution experiments, Spokesperson in experiment proposals E158, E159, E163.

June 1, 2001 to Dec. 7, 2001, Project Leader for TRI μ P Magnet Separator at KVI, Groningen, design of double magnetic separator, vendor specifications.

Dec 1, 2001 to Dec. 9, 2002, Visiting professor at RCNP, COE program of the Japanese Government. Execution of proposed experiments and publication of results, development of new experiment proposals.

October 15, 2005 to November 15, 2005, Invited stay at the Center of Nuclear Study, University of Tokyo to consult in the design of the spectrometer SHARAQ for high resolution studies using the secondary beams of the RIBF facility at RIKEN.

Jan. 8 to March 11, 2006, Invited stay at the Center of Nuclear Study, University of Tokyo for the design of the Spectrometer SHARAQ and a Lecture Series on ion-optics and a seminar on experimental studies of the rp process.

G. Membership in Professional Societies:

H. Publications:

A. Books, Book Chapters, Refereed Journal Publications, Magazine Articles

- 1) Optical Model Analysis of Proton Elastic Scattering Excitation Functions around $A=90$, K. Schulte, G. Berg, P. von Brentano, and H. Paetz gen. Schieck, Nucl. Phys. **A241**, 272 (1975).
- 2) Fluctuations in $^{88}\text{Sr}(p,p')$ and $^{90}\text{Zr}(p,p')$ in the Energy Region from 12 MeV to 13 MeV, G. Berg, W. Kuehn, H. Paetz gen. Schieck, K. Schulte, and P. von Brentano, Nucl. Phys. **A254**, 169 (1975).
- 3) Study of the $^{37}\text{Cl}(dt)^{36}\text{Cl}$ Reaction, G.P.A. Berg and P.A. Quin, Nucl. Phys. **A274**, 241 (1976).
- 4) Study of the $^{24}\text{Mg}(dp)^{25}\text{Mg}$ Reaction with Polarized Deuterons, G.P.A. Berg, Rina Das, S.K. Datta, and P.A. Quin, Nucl. Phys. **A289**, 15 (1977).
- 5) $^{58}\text{Ni}(^{16}\text{O},^{12}\text{C})^{62}\text{Zn}$ Reaction at 46 and 60 MeV Incident Energy, G.P.A. Berg, B. Berthier, J.P. Fouan, J. Gastebois, J.P. LeFevre, and M.-C. Lemaire, Phys. Rev. C **18**, 2204 (1978).
- 6) Investigation of Deuteron Induced Reactions on ^{12}C , S.K. Datta, G.P.A. Berg, and P.A. Quin, Nucl. Phys. **A312**, 1 (1978).
- 7) Coupled-Channels and Fluctuation Analysis of Deuteron Stripping and Deuteron Scattering on ^{20}Ne , S.K. Datta, G.P.A. Berg, and P.A. Quin, Nucl. Phys. **A332**, 125 (1979).
- 8) Comparison of the $^{28}\text{Si}(^{16}\text{O},^{12}\text{C})^{32}\text{S}$ and $^{28}\text{Si}(^{18}\text{O},^{14}\text{C})^{32}\text{S}$ Reactions at 60 MeV Incident Energy, G.P.A. Berg, M.A.G. Fernandes, K. Nagatani, J.C. Peng, B. Berthier, J.P. Fouan, J. Gastebois, J.P. LeFevre, and M.-C. Lemaire, Phys. Rev. C **19**, 62 (1979).
- 9) Study of $T^>$ Fluctuations in $^{94,96}\text{Zr}(p,p)$ in the Energy Region from 11.2 to 13.4 MeV, H. Paetz gen. Schieck, G. Latzel, W. Lenssen, and G.P.A. Berg, Z. Phys. **A293**, 253 (1979).
- 10) A Two-Dimensional Position Sensitive Charged-Particle Detector for the Magnetic Spectrograph "BIG KARL" of the Julich Cyclotron, "JULIC", M. Koehler, K.D. Mueller, H. Stoff, M. Teske, G.P.A. Berg, A. Hardt, S. Martin, C. Mayer-Boericke, and J. Meissburger, Nucl. Instr. Meth. **175**, 357 (1980).
- 11) $^{24}\text{Mg}(^{18}\text{O},^{16}\text{O})^{26}\text{Mg}$ Reaction at $E(^{18}\text{O}) = 50$ MeV Including Scattering in Entrance and Exit Channel, M. Bernas, F. Pougheon, M. Roy-Stephan, G.P.A. Berg, B. Berthier, J.P. LeFevre, and B.H. Wildenthal, Phys. Rev. C **22**, 1872 (1980).
- 12) Test of Vacuum Polarization by Precise Investigation of Delbrueck Scattering, P. Rullhusen, M. Mueckenheim, F. Smend, M. Schumacher, G.P.A. Berg, K. Mork, and Lynn Kissel, Phys. Rev. C **23**, 1375 (1981).
- 13) Exact Finite-Range DWBA Description of the $^{60}\text{Ni}(^{16}\text{O},^{12}\text{C})^{64}\text{Zn}$ Reaction at 60 MeV Incident Energy, G.P.A. Berg and B. Berthier, Z. Phys. **A305**, 235 (1982).

- 14) High Resolution Spectroscopy of $^{102}\text{Ru}(d,p)^{103}\text{Ru}$ and $^{104}\text{Ru}(p,d)^{103}\text{Ru}$ Reactions, G.P.A. Berg, M. Demarteau, A. Hardt, W. Huerlimann, S.A. Martin, J. Meissburger, W. Oelert, H. Seyfarth, B. Styczen, M. Koehler, J. Oelrich, and J. Scheerer, Nucl. Phys. **A379**, 93 (1982)
- 15) Excitation of the 10.212 MeV 1^+ State in $^{48}\text{Ca}(p,p')$ at $E_p=44.4$ MeV, G.P.A. Berg, W. Huerlimann, I. Katayama, S.A. Martin, J. Meissburger, J. Roemer, B. Styczen, F. Osterfeld, G. Gaul, R. Santo, and G. Sondermann, Phys. Rev. C **25**, 2100 (1982).
- 16) The Giant Octupole Resonance in Deformed Nuclei, H.P. Morsch, M. Rogge, P. Turek, P. Decowski, L. Zemlo, C. Mayer-Boericke, S.A. Martin, G.P.A. Berg, I. Katayama, J. Meissburger, J.G.M. Roemer, J. Reich, P. Wucherer, and Braeutigam, Phys. Lett. **119B**, 311 (1982).
- 17) Charge Transfer Reactions of the ^3He in Carbon at 68,99 and 130 MeV, I. Katayama, G.P.A. Berg, W. Huerlimann, S.A. Martin, J. Meissburger, W. Oelert, M. Rogge, J.G.M. Roemer, J. Tain, B. Styczen, and G. Gaul, Phys. Lett. **92A**, 385 (1982).
- 18) Spectroscopic Results from a High-Resolution Study of Proton Particle-Hole States in ^{208}Pb G. Mairle, K. Schindler, P. Grabmayr, G.J. Wagner, U. Schmidt-Rohr, G.P.A. Berg, W. Huerlimann, S.A. Martin, J. Meissburger, J.G.M. Roemer, B. Styczen, and J.L. Tain, Phys. Lett. **121B**, 307 (1983).
- 19) Equilibrium Charge States of ^3He Ions in Solides at High Incident Energies, I. Katayama, G.P.A. Berg, W. Huerlimann, S.A. Martin, J. Meissburger, W. Oelert, M. Rogge, J.G.M. Roemer, J.L. Tain, B. Styczen, and G. Gaul, Phys. Rev. **A27**, 2738 (1983).
- 20) $(d,^6\text{Li})$ Alpha-Transfer Reaction on ^{32}S and ^{34}S at $E_d=80$ MeV, W. Oelert, G.P.A. Berg, A. Djalois, C. Mayer-Böricke, and P. Turek, Phys. Rev. C **28**, 73 (1983).
- 21) The QQDDQ Magnet Spectrometer "BIG KARL", S.A. Martin, A. Hardt, J. Meissburger, G.P.A. Berg, U. Hacker, W. Huerlimann, J.G.M. Roemer, T. Sagefka A. Retz, O.W.B. Schult, K.L. Brown, and K. Halbach, Nucl. Instr. Meth. **214**, 281 (1983).
- 22) Isoscalar Giant Resonances in ^{208}Pb - in Particular $2h = 0,2,4$ and 6 Excitations - Studied in Small Angle Alpha Scattering, H.P. Morsch, P. Decowski, M. Rogge, P. Turek, L. Zemlo, S.A. Martin, G.P.A. Berg, W. Huerlimann, J. Meissburger, and J.G.M. Roemer, Phys. Rev. C **28**, 1947 (1983).
- 23) Identification of a Complete Particle-Octupole Multiplet in ^{143}Nd , L. Trache, J. Wrzesinski, C. Wesselborg, D. Bazzacco, R. Reinhardt, C.F. Moore, P. von Brentano, G.P.A. Berg, W. Huerlimann, I. Katayama, J. Meissburger, J.G.M. Roemer, and J.L. Tain, Phys. Lett. **131B**, 285 (1983).
- 24) High-Energy Electron Capture and Stripping in Gas Targets, I. Katayama, G.P.A. Berg, W. Huerlimann, S.A. Martin, J. Meissburger, W. Oelert, M. Rogge, J.G.M. Roemer, J.L. Tain, L. Zemlo, and G. Gaul, J. Phys. **B17**, L23 (1984).
- 25) Study of Proton-Hole States in ^{61}Co Using the $^{62}\text{Ni}(d,^3\text{He})^{61}\text{Co}$ Reaction at 78 MeV, A. Marinov, W. Oelert, S. Gopal, G.P.A. Berg, J. Bojowald, W. Huerlimann, I. Katayama, S.A. Martin, C. Mayer-Böricke, J. Meissburger, J.G.M. Roemer, M. Rogge, J.L. Tain, P. Turek, L.

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31) On the Mechanism of the $^{144}\text{Ne}(p,)^{141}\text{Pr}$ Reaction, E. Gadioli, E. Gadioli-Erba, P. Guazzoni M. Luinetti, L. Zetta, G.P.A. Berg, J. Meissburger, D. Paul, D. Prasuhn, J.G.M. Roemer, and P. von Rossen, Z. Phys. A - Atomic Nuclei **325**, 61 (1986).

32) Multinucleon Transfer Reactions with $^7\text{Li} + ^7\text{Be}$ in Exit Channel, L. Jarczyk, B. Kamys, Z. Rudy, A. Strzalkowski, B. Styczen, G.P.A. Berg, A. Magiera, J. Meissburger, W. Oelert, P. Von Rossen, J.G.M. Roemer, J.L. Tain, H.H. Wolter, E. Kwasniewicz, and J. Kisiel, Phys. Rev. **C33**, 934 (1986)

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34) Five-Nucleon Transfer in the $^{12}\text{C}(d, ^7\text{Li})^7\text{Be}$ Reaction at $E_{\text{lab}}=78.0$ MeV, L. Jarczyk, B. Kamys, Z. Rudy, A. Strzalkowski, B. Styczen, G.P.A. Berg, A. Magiera, J. Meissburger, W. Oelert, P. von Rossen, J.G.M. Roemer, J.L. Tain, H.H. Wolter, and E. Kwasniewicz, Z. Phys. A - Atomic Nuclei **325**, 303 (1986).

35) Measurement of Electron Capture and Stripping Cross Sections of ^3He in Al, Ni, Ag and Au Targets at 68, 99 and 130 MeV, I. Katayama, G.P.A. Berg, S.A. Martin, J. Meissburger, W. Oelert, A. Retz, M. Rogge, J.G.M. Roemer, G. Gaul, H. Hasai, J.L. Tain, And L. Zemlo, Z. Phys. D - Atoms, Molecules and Clusters **3**, 73 (1986).

- 36) Proton and Deuteron Inelastic Excitation of the 1^+ State at $E_x = 5.846$ MeV in ^{208}Pb : Isoscalar Character and Importance of Tensor Correlations, J.L. Tain, G.P.A. Berg, I. Katayama, S.A. Martin, J. Meissburger, J.G.M. Roemer, and J. Wambach, *Phys. Rev. C* **35**, 1288 (1987).
- 37) Proton Particle-Hole States in ^{208}Pb , P. Grabmayr, G. Mairle, U. Schmidt-Rohr, G.P.A. Berg, J. Meissburger, P. von Rossen, and J.L. Tain, *Nucl. Phys.* **A469**, 285 (1987).
- 38) Spectroscopy of ^{142}Nd and ^{143}Nd Via Inelastic Proton Scattering at $E_p=25\text{MeV}$, L. Trache, J. Wrzesinski, C. Wesselborg, A. Clauberg, K.O. Zell, R. Reinhardt, P. von Brentano, D. Bazzacco, G.P.A. Berg, W. Huerlimann, J. Meissburger and J.L. Tain, *Nucl. Phys.* **A492**, 23 (1989).
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- 41) $^{17}\text{O}(\text{dt})^{16}\text{O}$ at 89 MeV; j dependence and particle-hole matrix elements, Swapan K. Saha, W.W. Daehnick, S.A. Dytman, P.C. Li, J.G. Hardie, G.P.A. Berg, C.C. Foster, W.P. Jones, D.W. Miller, and E.J. Stephenson, *Phys. Rev. C* **42**, 922 (1990).
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Berg, C. C. Foster, J. E. Lisantti, R. Sawafita, E.J. Stephenson, A.M. van den Berg, S.Y. van der Werf, S.E. Muraviev, and M.H. Urin, *Phys. Rev. C* **48** (1993) 2828.

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B. Invited Papers, Conference Proceedings

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63) Spin-isospin excitations from the ground-state of ^{64}Ni , L. Popescu, T. Adachi, C. Baeumer, G.P.A. Berg, A.M. van den Berg, P. von Brentano, D. Frekers, D. De Frenne, K. Fujita, Y. Fujita, E.W. Grewe, P. Haefner, K. Hatanaka, M. Hunyadi, M. de Huu, E. Jacobs, H. Johansson, A. Korff, A. Negret, K. Nakanishi, P. von Neumann-Cosel, S. Rakers, N. Ryezayeva, Y. Sakemi, A. Shevchenko, Y. Shimbara, Y. Shimizu, H. Simon, Y. Tameshige, A. Tamii, M. Uchida, H.J. Woertche, M. Yosoi, Capture Gamma-Ray Spectroscopy and Related Topics, 12th International Symposium, Notre Dame, Indiana 4 - 9 Sept. 2005, ed. A. Woehr and A. Aprahamian, AIP Conf. Proc., Vol. 819, Melville, New York, 2006, p 550.

64) TRImP - a Radioactive-Atom Trapping Facility at KVI, G.P.A. Berg, U. Dammalapati, S. De, S. Dean, P. Dendooven, O. Dermois, K. Jungmann, A. Rogachevskiy, M. Sohani, E. Traykov, L. Willmann, and H.W. Wilschut, AIP Conf. Proc., Vol. 831, Melville, New York, 2006, p 403.

C. Seminars, Presentations and Lectures (since 1986)

1) Experiments with the High-Resolution Spectrometer BIG KARL, Seminar, June 5, 1986, Indiana University Cyclotron Facility.

2) Commissioning of the K600 Spectrometer - A New Magnetic Spectrometer System for Intermediate Energy Physics at IUCF, Seminar, April 27, 1987, University of Maryland.

3) High Resolution Experiments with the K600 Magnet Spectrometer at IUCF, Seminar, January 20, 1988, Michigan State University.

- 4) Experimente mit dem hochaufl senden Magnet Spektrographen K600, Seminar, October 5, 1988 Institut f r Kernphysik, Kernforschungsanlage Juelich.
- 5) The High Resolution Magnet Spectrometer K600 and the Focal Plane Polarimeter at IUCF, seminar, January 6, 1989, Intl. Symp. on Heavy Ion Research with Magnet Spectrometers, East Lansing, MI, 5-7 January, 1989.
- 6) Eine Magnetanordnung zur Spektroskopie unter 0° am IUCF Cooler Ring, 7. CANU Arbeitstreffen, Datenaufnahme und Instrumentierung an COSY, Seminar, Bad Honnef, 18-19 December, 1989.
- 7) Kleinwinkelspektroskopie am K600 und Spektroskopie unter 0° am IUCF Cooler Ring, Seminar, December 20, 1989, Institut fuer Kernphysik, Kernforschungsanlage Juelich.
- 8) Spectrograph Experiments at a Cooler Ring, Seminar for Future Accelerator Discussion at Michigan State University, October 7, 1991.
- 9) Small Angle Experiments with the K600 Spectrometer, Notre Dame Workshop on Giant Resonances and Related Phenomena, October 21- 23, 1991.
- 10) Detector System and Small Angle Modes of the K600 Spectrometer at IUCF, S800 Workshop on Focal Plane Detectors, January 6-7, 1993, MSU-NSCL, East Lansing.
- 11) Magnet Spectrometer for the IUCF Cooler, Invited talk at 105. WE-Heraeus-Seminar, Hadronic Processes at Small Angles in Storage Rings, February 1993, Bad Honnef, Germany.
- 12) Experimental Facilities at the IUCF Cyclotron and Cooler Storage Ring, Seminar, October 18, 1993, MSU-NSCL, East Lansing.
- 13) High Resolution Beam Line and Spectrometer Matching and Feasibility for Grand Raiden, G.P.A. Berg, Dec. 1, 1995, talk at RCNP, Osaka.
- 14) Conference presentation: Nuclear Reactions Near and at 0° Scattering Angles, G.P.A. Berg, Proc.XIV. RCNP Osaka Intl. Symp. Nuclear Reaction Dynamics of Nucleon-Hadron Manybody System, Dec. 6-9, 1995, Osaka, Japan.
- 15) Invited talk at Workshop on Light Ion Induced Nuclear Reactions and Mechanism, University of Kyushu, Fukuoka, Jan. 6 - 7, 1997. Title of talk: Nuclear Reaction Experiments at 0° Scattering Angles.
- 16) Seminar talk at RCNP, Jan. 8, 1997, Title of talk: Matching of Beam Line and Spectrometer for High Performance Nuclear Experiments.
- 17) Seminar talk at HIMAC, Jan. 13, 1997, Accelerator and Experimental Facilities at IUCF.
- 18) Seminar talk at RIKEN, Jan.14, 1997, Experiments at 0° and Accelerator Projects at IUCF.
- 19) Seminar talk at RCNP, 3/15/1997, The Grand-Analyzer Project.

- 20) Invited presentation NSCL User's Workshop on Future Experiments and Detectors for Nuclear Structure and Astrophysics at the Upgraded NSCL, MSU-NSCL, Aug. 8 -9, 1997, 2Nuclear Reaction and Techniques at 0 Degree Scattering Angles.
- 21) Seminar talk at IKP, FZ Juelich, June 16, 1998, Kernphysik im Wandel der Zeit - ueber die Kernreaktion (α , ^8He) zur Protonentherapie.
- 22) Invited presentation RCNP WS2000 Scientific Program, March 28-29, 2000, Beam Diagnostics at IUCF for the K600 spectrometer modes.
- 23) Seminar at Wakasa Wan Energy Research Center, Jan. 16, 2001, The IUCF Proton Therapy Project.
- 24) Seminar talks at RIKEN, Japan, February 13, 2002, Electro-magnetic Devices in Nuclear Experiments and Facilites, Seminar in two parts: I) Ion-optics and magnet design for nuclear experiments. II) Experiments at) degree and magnet separator TRImP.
- 25) Presentation at RCNP, Japan, March 13, 2002, The New TRImP Facility at KVI
- 26) Seminar a the Kyushu University, Fukuoka, Japan, March 1, 2002, High Resolution Particle Spectroscopy in Nuclear Structure and Astrophysics Studies.
- 27) Presentation at RCNP, April 5, 2002, Nuclear Physics with High Resolution Beams
- 28) TRImP - A Radioactive Isotope Trapping Facility, Panic 2002 Sept, Osaka, Japan
- 29) Magnetic Analysis and Matching Techniques in Nuclear Physics, Seminar at the Kyoto University, Dec. 3, 2002
- 30) Possible spectrometer concept for NESR-collider, Workshop Inelastic Scattering with Radioactive Nuclei, KVI, Groningen, Feb. 19 -22, 2003
- 31) Ion Optics - An Introduction for Physicists, NIPNET - HITRAP IONCATCHER, Annual Joint Collaboration Meeting, La Londe-les-Maures, 21 - 25 May, 2003
- 32) The Current Status of the TRImP Separator, NNV Section K&H Meeting, Lunteren, Oct 10, 2003
- 33) The Current Status of the TRImP Separator, DPG Spring Meeting, Köln Mar. 8 - 12, 2004.
- 34) An Introduction to Ion-Optics, Series of Five Lectures, JINA, University of Notre Dame, Sept. 30 - Dec. 9, 2005
- 35) Experimental Studies for the rp Process, Seminar, Center of Nuclear Study, University of Tokyo, RIKEN Campus, Feb. 20, 2006
- 36) An Introduction fo the Ion-Optics of Magnet Spectrometers, Series of Three Lectures, Center of Nuclear Study, University of Tokyo, ICHOR Project/ RIKEN Nuclear Physcis Group, The

D. Selected Design Notes

- 1) Search for Fragmented M1 Strength in the $^{48}\text{Ca}(p,p)$ Reaction, D.J. Mercer, G.M. Crawley, S. Danczyk, A. Galonsky, J. Wang, A. Bacher, G.P.A. Berg, A.C. Betker, W. Schmidt, E. Stephenson, IUCF Sci. and Tech. Report 1994-1995, 20
- 2) Measurement of High Momentum Transfer Reactions on the Indiana Cooler by Recoil Detection, R.D. Bent, C. Sun, G.P.A. Berg, J. Blomgren, H. Nann, T. Rinckel, M. Saber, R.E. Segel, F.-J. Chen, P. Heimberg, Z. Yu, J.D. Brown, R. Jacobsen, G. Hardie, P. Pancella, R. Schneider, J. Homolka, K.E. Rehm, A. Zhuravlev, A. Kurepin, IUCF Sci. and Tech. Report 1994-1995, 32
- 3) CE46: Skimmer Targets for the Cooler, P.V. Pancella, J. Wernau, A.D. Bacher, G.P.A. Berg, J. Cameron, W.A. Dezarn, J. Doskow, W. Lozowski, H.O. Meyer, D. Miller, B. Von Prewoski, T. Rinckel, P. Schwandt, F. Sperisen, P. Heimberg, IUCF Sci. and Tech. Report 1994-1995, 146
- 4) Magnet Mapping at IUCF, G.P.A. Berg, T. Hall, T. Rinckel, IUCF Sci. and Tech. Report 1994-1995, 177
- 5) Beam Transport System for High Resolution Experiments, M. Sato, K. Hatanaka, K. Hosono, T. Noro, K. Tamura, Y. Fujita, and G.P.A. Berg, RCNP Annual Report 1995, RCNP Osaka University, April 1, 1995 - March 31, 1996, p 162.
- 6) Possible observation of the $1/2^+[880]$ orbital in ^{249}Cm . I. Ahmad, B.B. Back, R.R. Chasman, J.P. Greene, T. Ishii, L.R. Morss, G.P.A. Berg, A. Bacher, C.C. Foster, W.R. Lozowski, W. Schmitt, E.J. Stephenson, IUCF Sci. and Tech. Report 1995-1996, p 18.
- 7) The First ($t, ^3\text{He}$) Measurement at Intermediate Energy at NSCL. I. Daito, H. Akimune, S. Austin, D. Bazin, G. Berg, J. Brown, B. Davids, H. Ejiri, Y. Fujita, M. Fujiwara, R. Hazama, T. Inomata, J. Jaenecke, S. Nakayama, K. Pham, D. Roberts, B. Sherrill, M. Steiner, A. Tamii, M. Tanaka, H. Toyokawa, M. Yosoi, RCNP Annual Report 1995, RCNP Osaka University, April 1, 1995 - March 31, 1996, p 22.
- 8) The ($t, ^3\text{He}$) Charge-Exchange Reaction at $E(t) = 127$ A MeV, $\Theta = 0$ degree; J. Jaenecke, H. Akimune, S.M. Austin, G.P.A. Berg, J.A. Brown, I. Daito, Y. Fujita, M. Fujiwara, R. Hazama, T. Inomata, K. Pham, D.A. Roberts, B.M. Sherrill, A. Tamii, M. Tanaka, Bull. Am. Phys. Soc. 40 (1995) 977.
- 9) Proton unbound states in $T=3/2$ and $T=2$ nuclei and the reaction rates for sequential two-proton capture reactions in the rp-process. H. Schatz, J. Goerres, H. Herndl, N. Kaloskamis, E. Stech, P. Tischhauser, M. Wiescher, A. Bacher, G.P.A. Berg, T.C. Black, S. Choi, C.C. Foster, K. Jiang, W. Schmitt, E.J. Stephenson, IUCF Annual Report 1995-1996, p. 36
- 10) Calculation of the Vacuum Chamber Eddy Current, G.P.A. Berg, X. Kang, and S.Y. Lee, CIS Design Note 5/4/96

- 11) Concept of CIS LEBL and TRANSPORT Parameters. Georg Berg, CIS Design Note 6/26/96
- 12) Self-correcting Coils for Vacuum Chamber in CIS Main Dipole. G.P.A. Berg, CIS Design Note 8/26/96
- 13) CIS Kicker Design. G. P.A. Berg, CIS Design Note 10/4/96
- 14) Calculation and Measurement of CIS Dipole Field, X.Kang, G.P.A. Berg, D.Friesel, and S.Y. Lee, CIS Design Note 11/19/96
- 15) CIS Dipole Ramp Procedure, G.P.A. Berg, CIS Design Note 9/10/1997
- 16) Report of Magnet Design of MELCO Main Dipole Magnets, G.P.A. Berg, MELCO Design Note 11/25/1997
- 17) Design of Dipole Magnet L91 for CIS Beam Injection into Cooler, G.P.A. Berg, CIS Design Note 2/2/1998
- 18) Cross Sections and Polarization Transfer Observables in $^{12}\text{C}(p,p')$ Reaction around 0Degrees, A.Tamii, M.Yosoi, H.Sakaguchi, M.Nakamura, H.Takeda, M.Itho, T.Kawabata, T.Taki, T.Noro, M.Fujiwara, K.Hatanaka, H.Akimune, M.Yoshimura, M.Kawabata, I.Daito, F.Ihara, H.Yoshida, K.Ishibashi, Y.Fujita, T.Inomata, H.Toyokawa, K.Hosono, G.P.A.Berg, and Y.Sakemi, RCNP Annual Report 1996, RCNP Osaka University, April 1, 1996 - March 31, 1997, p 31.
- 19) Design of a 30 Degree Standard Dipole Magnet for the IUCF Proton Therapy Facility, G.P.A. Berg, MPRI Note 12/2/98.
- 20) WS beam-line Project - physics and technical study. K. Hatanaka, Y. Fujita, T. Wakasa, H. Fujita, T. Noro, H. Ueno, H. Sakaguchi, T. Kawabata, J. Kamiya and G.P.A. Berg, Collaboration of the RCNP Osaka, Dept. of Phys. Osaka, Dept. of Phys. Kyoto and IUCF Indiana, RCNP Internal Report Dec. 1998
- 21) Quadrupole Assignment for the Trunk Line and Energy Selection System, MPRI Technical Note 3/10/99.
- 22) Progress in the Beam Line Design and Ion-Optics of the IUCF Proton Therapy Facility (Ion-optical Matching of Energy Selection System and Single Plane Gantry), G.P.A. Berg, IUCF Proton Therapy Note 5/19/99.
- 23) Ion Optics for the Fixed Beam Line, G.P.A. Berg, IUCF Proton Therapy Note 5/20/99.
- 24) Beam Diagnostic for the IUCF Proton Therapy Facility, G.P.A. Berg, IUCF Proton Therapy Note 7/23/99.
- 25) Modified Beam Line 3 Design to Accommodate Recently Measured Cyclotron Phase Space Parameters. G.P.A. Berg, IUCF Proton Therapy Note 9/02/99.
- 26) Design of the Energy Selection System E1 for the Proton Therapy Eye Line, G.P.A. Berg,

IUCF Proton Therapy Note 9/07/99.

27) Updated Design of the Energy Selection System E1 for the Proton Therapy Eye Line, G.P.A. Berg, IUCF Proton Therapy Note 9/21/99.

28) Updated Design of the Energy Selection System E2 for the Proton Therapy Fixed Beam Line, G.P.A. Berg, IUCF Proton Therapy Note 9/28/99.

29) Updated Design of the Energy Selection Systems E3 and E4 for the Proton Therapy Gantry Lines, G.P.A. Berg, IUCF Proton Therapy Note 11/01/99.

30) A New Energy Selection System for the First Treatment Room, G.P.A. Berg, IUCF Proton Therapy Note 12/08/99.

31) Update of the CE78 Magnetic Channel, G.P.A. Berg, CE78 Design Note 2/01/2000.

32) Update of Beam Line BL3 for the Proton Therapy Gantry Lines, G.P.A. Berg, Proton Therapy Note 2/02/2000

33) A new Analyzing Magnet for the KN van de Graaff Accelerator, L.O. Lamm, E. Stech, G. Berg, M. Couder, Design Report, Dept. of Physics, University of Notre Dame, Dec. 12, 2005.

34) Design Study of a New Dipole Magnet D2 for the SHARAQ Spectrometer, Georg Berg, Center of Nuclear Study, University of Tokyo, October 30, 2005.

35) Evaluation of SMART Dipole for SHARAQ D1, Georg Berg, Center of Nuclear Study, University of Tokyo, January 23, 2006

36) End Profile of SHARAQ Dipoles D1 and D2, Georg Berg, Center of Nuclear Study, University of Tokyo, February 1, 2006

37) Fringe Field Design for SHARAQ Dipole D2, Georg Berg, Center of Nuclear Study, University of Tokyo, March 6, 2006