

Jun Chen — Curriculum Vitae

CONTACT INFORMATION

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EDUCATION

McMaster University, Hamilton, ON, Canada
01/2004–06/2009

Ph.D., Physics, September 2009

- Dissertation: “Study of the Astrophysically Important States in ^{26}Si via the $p(^{27}\text{Si},d)^{26}\text{Si}^*$ Reaction and the $p(^{25}\text{Al},p)^{25}\text{Al}$ Elastic Scattering”
- Advisor: Prof. Alan Chen

M.Sc., Physics, February 2006

- Dissertation: “GEANT4 Simulations and Experimental Tests of a Silicon CD Detector”
- Advisor: Prof. Alan Chen

Peking University, Beijing, P.R.China
09/1998–07/2002

B.Sc., Physics, July 2002

- Dissertation: “Testing of a Photomultiplier Tube in the Radiation Detection”
- Advisor: Prof. Yanlin Ye

AWARDS, PRIZES AND MEMBERSHIP

- Frank Denee Scholarship, McMaster University, 2006-2007, Canada
- Student Excellence Award and Scholarship, Peking University, 1999-2001, China
- Student Excellence Award, Yunmeng No.1 High School, 1995-1998, China
- 1st place in the city area of Yunmeng in the National College Entrance Examination, 1998, China
- 2nd prize in the National Mathematics Contest for High School Students, 1997, China
- Member of the Canadian Association of Physicists (CAP)
- Member of the American Physical Society (APS)

EXPERIENCE

Post-doctoral Fellow, McMaster University, June 2009 - present

- Nuclear structure data evaluation for the data project of the National Nuclear Data Center (NNDC) at the Brookhaven National Laboratory.
- Nuclear reaction rate evaluation for the project of astrophysical nuclear reaction rates at the Oak Ridge National Laboratory.
- Nuclear astrophysics research in experimental nuclear astrophysics (Yale University, TRIUMF at Vancouver, RIKEN and University of Tsukuba in Japan).
- Programming using C/C++ and Java for various utility codes that facilitate the data evaluation process.

Research Assistant, McMaster University, January 2004 - June 2009

- Data analysis of large-scale experimental nuclear data acquired at the National Super-conducting Cyclotron Laboratory (NSCL) in Michigan State University and the CNS Radio-Isotope Beam separator facility (CRIB) in University of Tokyo.
- Computer simulations of detector performance using the GEANT4 Monte-Carlo simulation toolkit.
- Programming using C/C++ and Fortran for all codes used in the data analysis.
- Conducted nuclear astrophysics experiments and analyzed experimental data for thesis research projects (Michigan State University and RIKEN).
- Nuclear radiation detectors (Silicon and Germanium), signal processing electronics, and data acquisition system in nuclear reaction and gamma spectroscopy experiments.
- Involvement in a variety of other experiments in nuclear astrophysics.

Teaching Assistant, McMaster University, January 2004 - May 2009

- Tutorials and weekly physics lab exercises to undergraduates (PHY1EO3 - College Physics).
- Office hours and senior undergraduate assignment marking (PHY4E03 - Nuclear Physics).

COMPUTER SKILLS

- Languages: Java, Fortan, C/C++, HTML, JavaScript, Matlab, Delphi, Pascal, Linux shell scripts.
- Applications: MySQL, ROOT data analysis package, ANAPAW analysis tool, SRIM, LISE++, GEANT4 simulation toolkit, L^AT_EX, LabView, Origin, Gnuplot, common Windows software such as MS Office and Maple.
- Operating Systems: Unix/Linux, Windows.

PUBLICATIONS

- **J. Chen**, A. A. Chen, G. Amadio, S. Cherubini, H. Fujikawa, N. Iwasa, J. J. He, S. Hayakawa, D. Kahl, L. H. Khiem, S. Kubono, S. Kurihara, Y. K. Kwon, M. La Cognata, J. Y. Moon, M. Niikura, S. Nishimura, J. Pearson, R. G. Pizzone, T. Teranishi, Y. Togano, Y. Wakabayashi, and H. Yamaguchi, *Strong $^{25}\text{Al}+p$ resonances via elastic proton scattering with a radioactive ^{25}Al beam*, Phys. Rev. C 85, 015804 (2012).
- **Jun Chen**, John Cameron and Balraj Singh, *Nuclear Data Sheet for $A=35$* , Nuclear Data Sheets 112, 2715-2850 (2011).
- **Jun Chen**, Balraj Singh and John Cameron, *Nuclear Data Sheet for $A=44$* , Nuclear Data Sheets 112, 2357 (2011).
- **Jun Chen** and Balraj Singh, *Nuclear Data Sheet for $A=43$* , submitted to Nuclear Data Sheets (2011).
- Balraj Singh and **Jun Chen**, *Nuclear Data Sheet for $A=85$* , submitted to Nuclear Data Sheets (2011).
- **Jun Chen**, Scott D. Geraedts, Christian Ouellet, Balraj Singh, *Evaluation of half-life of ^{198}Au* , Appl. Radiat. Isotopes 69, 1064-1069 (2011).
- **Jun Chen** and Balraj Singh, *Nuclear Data Sheet for $A=33$* , Nuclear Data Sheets 112, 1393-1511 (2011).
- **J. Chen**, A. A. Chen, A. M. Amthor, D. Bazin, A. D. Becerril, A. Gade, D. Galaviz, T. Glasmacher, D. Kahl, G. Lorusso, M. Matos, C. V. Ouellet, J. Pereira, H. Schatz, K. Smith, B. Wales, D. Weisshaar, R. G. T. Zegers, *^{26}Si excited states via the $p(^{27}\text{Si},d\gamma)^{26}\text{Si}$ reaction*, in preparation.
- K. Setoodehnia, A. A. Chen, T. Komatsubara, S. Kubono, D. N. Binh, J. F. Carpino, **J. Chen**, T. Hashimoto, T. Hayakawa, Y. Ishibashi, Y. Ito, D. Kahl, T. Moriguchi, H. Ooishi, A. Ozawa, T. Shizuma, Y. Sugiyama, and H. Yamaguchi, *Spins and parities of astrophysically important ^{30}S states from $^{28}\text{Si}(^3\text{He}, n\gamma)^{30}\text{S}$* , Phys. Rev. C 83, 018803 (2011).
- C. Aa. Diget, S. P. Fox, A. Smith, S. Williams, M. Porter-Peden, L. Achouri, P. Adsley, H. Al-Falou, R. A. E. Austin, G. C. Ball, J. C. Blackmon, S. Brown, W. N. Catford, A. A. Chen, **J. Chen**, R. M. Churchman, J. Dech, D. Di. Valentino, M. Djongolov, B. R. Fulton, A. Garnsworthy, G. Hackman, U. Hager, R. Kshetri, L. Kurchaninov, A. M. Laird, J. -P. Martin, M. Matos, J. N. Orce, N. A. Orr, C. J. Pearson, C. Ruiz, F. Sarazin, S. Sjue, D. Smalley, C. E. Svensson, M. Taggart, E. Tardiff, G. L. Wilson, *SHARC: Silicon Highly-segmented Array for Reactions and Coulex used in conjunction with the TIGRESS γ -ray spectrometer*, JINST 6, P02005 (2011).
- John Cameron, **Jun Chen**, Balraj Singh and Ninel Nica, *Nuclear Data Sheet for $A=37$* , submitted to Nuclear Data Sheets (2010).
- T. Komatsubara, S. Kubono, T. Hayakawa, T. Moriguchi, Y. Ito, H. Ooishi,

Y. Ishibashi, K. Y. Hara, A. Ozawa, T. Shizuma, S. Hayakawa, H. Yamaguchi, Dam N. Binh, D. Kahl, A. A. Chen, **J. Chen**, K. Nakamura, and T. Kajino, *Spin assignments of excited states above the proton threshold in ^{26}Si and its implications for stellar nucleosynthesis of ^{26}Al* , submitted to Phys. Lett. B (2010).

- L. Erikson, C. Ruiz, F. Ames, P. Bricault, L. Buchmann, A. A. Chen, **J. Chen**, H. Dare, B. Davids, C. Davis, C. M. Deibel, M. Dombisky, S. Foubister, N. Galinski, U. Greife, U. Hager, A. Hussein, D. A. Hutcheon, J. Lassen, L. Martin, D. F. Ottewell, C. V. Ouellet, G. Ruprecht, K. Setoodehnia, A. C. Shotter, A. Teigelhöfer, C. Vockenhuber, C. Wrede, and A. Wallner, *First direct measurement of the $^{23}\text{Mg}(p,\gamma)^{24}\text{Al}$ reaction*, Phys. Rev. C 81, 045808 (2010).
- K. Setoodehnia, A. A. Chen, **J. Chen**, J. A. Clark, C. M. Deibel, S. D. Geraedts, D. Kahl, P. D. Parker, D. Seiler, and C. Wrede, *Structure of ^{30}S with $^{32}\text{S}(p,t)^{30}\text{S}$ and the thermonuclear $^{29}\text{P}(p,\gamma)^{30}\text{S}$ reaction rate*, Phys. Rev. C 82, 022801(R) (2010).
- **J. Chen**, A.A. Chen, H. Schatz, S. Kubono, A.B. Reyes, A. Smith, B. Wales, C. Ouellet, D. Kahl, D.G. Redondo, G. Lorusso, J. LeNestour, J.P. Conca, K. Smith, M. Amthor, M. Matos, H. Yamaguchi, N. Iwasa, S. Hayakawa, S. Michimasa, T. Teranishi, Y. Kurihawa and Y. Wakabayashi, *Study of astrophysically important states in ^{26}Si with the $p(^{27}\text{Si}, ^{26}\text{Si}^*)d$ reaction and the $p(^{25}\text{Al}, p)^{25}\text{Al}$ elastic scattering*, Nuclear Physics A834, 667c (2010).
- K. Setoodehnia, A. A. Chen, **J. Chen**, J. A. Clark, C. Deibel, D. Kahl, W. N. Lennard, P. D. Parker and C. Wrede, *Study of astrophysically important resonant states in ^{30}S using the $^{32}\text{S}(p,t)^{30}\text{S}$ reaction*, Nuclear Physics A 834, 205c (2010).

NON-THESIS
RESEARCH
INVOLVEMENT

- *Study of Astrophysically Important States in ^{30}S with In-beam γ -ray Spectroscopy and Their Spin Assignments using the DCO Method*, August 2010, University of Tsukuba, Japan.
- *Measurement of $^{30}\text{S}+\alpha$ Resonances via the (α, p) Reaction and (α, α) Elastic Scattering*, August 2010, RIKEN, Japan.
- *Study of astrophysically Important States in ^{30}S with the $^{32}\text{S}(p,t)^{30}\text{S}$ Reaction*, January 2010 and February 2009, WNSL, Yale University, USA.
- *A Direct Measurement of the $^{17}\text{O}(\alpha, \gamma)^{21}\text{Ne}$ Cross Section*, November 2009, TRIUMF, Canada.
- *Spin Assignment of Excited States Above Proton Threshold in ^{26}Si and Its Implication to Stellar Nucleosynthesis of ^{26}Al* , January 2009, University of Tsukuba, Japan.
- *First Direct Measurement of the $^{23}\text{Mg}(p,\gamma)^{24}\text{Al}$ Reaction with A Recoil Mass Separator*, November 2008, TRIUMF, Canada.

- *On the Waiting Point at A=30 X-ray Bursts: $^{30}\text{S}(\alpha, p)^{33}\text{Cl}$ with CRIB*, December 2006, RIKEN, Japan.

CONFERENCE AND
MEETING
PRESENTATIONS

- *Study of ^{26}Si excited states using radioactive beams*, seminar talk, Argonne National Laboratory, November 2011, USA.
- *^{26}Si excited states via one-neutron removal from ^{27}Si using radioactive beam*, contributed talk, 14th International Symposium on Capture Gamma-Ray Spectroscopy and Related Topics, August 2011, Guelph, Canada.
- *J^π values from R-Matrix analyses and Status report: Nuclear Data Project at McMaster University - Astrophysics Data*, contributed talks, 2009 USNDP Annual Meeting, November 2009, Brookhaven National Laboratory, New York, USA.
- *Study of the astrophysically important states in ^{26}Si via the $p(^{27}\text{Si}, d)^{26}\text{Si}^*$ reaction and the $p(^{25}\text{Al}, p)^{25}\text{Al}$ elastic scattering*, contributed talk, 10th International Conference on Nucleus-Nucleus Collisions, August 2009, Beijing, China.
- *Study of the astrophysically important states in ^{26}Si via the $p(^{27}\text{Si}, d)^{26}\text{Si}^*$ reaction and the $p(^{25}\text{Al}, p)^{25}\text{Al}$ elastic scattering*, poster, 10th International Symposium on Nuclei in the Cosmos, August 2008, Mackinac Island, Michigan, USA.
- *Measurement of $^{25}\text{Al}+p$ Resonances through Elastic Scattering with CRIB*, proposal presentation, 2007 PAC Meeting for Nuclear-Physics Experiments at RIBF of RIKEN, February 2007, Wako, Japan.
- *GEANT4 Simulations and Experimental Tests of a Silicon CD Detector*, contributed talk, 2006 CAP Annual Congress, June 2006, St. Catharines, ON, Canada.
- *Progress and Timeline for the McMaster Silicon CD Detector*, contributed talk, TIGRESS Scientific Roadmap Meeting, February 2005, Guelph, Canada.

CONFERENCE
PROCEEDINGS AND
REPORTS

- **J. Chen**, A. A. Chen, A. M. Amthor, D. Bazin, A. D. Becerril, A. Gade, D. Galaviz, T. Glasmacher, D. Kahl, G. Lorusso, M. Matos, C. V. Ouellet, J. Pereira, H. Schatz, K. Smith, B. Wales, D. Weisshaar, R. G. T. Zegers, *^{26}Si excited states via one-neutron removal from ^{27}Si using radioactive beam*, proceedings of the 14th International Symposium on Capture Gamma-Ray Spectroscopy and Related Topics (2011).
- G. L. Wilson, W. N. Catford, C. Aa. Diget, N. A. Orr, P. Adsley, H. Al-Falou, R. Ashley, R. A. E. Austin, G. C. Ball, J. C. Blackmon, A. J. Boston, H. J. Boston, S. M. Brown, A. A. Chen, **J. Chen**, R. M. Churchman, D. S. Cross, J. Dech, M. Djongolov, T. E. Drake, U. Hager, S. P. Fox, B. R. Fulton, N. Galinski, A. B. Garnsworthy, G. Hackman, D. Jamieson, R. Kanungo, K. Leach, J-P. Martin, J. N. Orce, C. J. Pearson, M. Porter-Peden, F. Sarazin, S. Sjue, C. Sumithrarachchi, C. E. Svensson, S. Triambak, C. Unsworth, R. Wadsworth, S. J. Williams and the tigress collaboration, *Towards ^{26}Na via*

(d,p) with SHARC and TIGRESS and a novel zero-degree detector, proceedings of the Rutherford IoP conference (2011).

- M. Taggart, U. Hager, A. M. Laird, C. Ruiz, D. Hutcheon, D. Ottewell, J. Fallis, L. Erikson, M. Bentley, J. R. Brown, L. Buchmann, A. A. Chen, **J. Chen**, K. A. Chipps, J. D'Auria, B. Davids, C. Davis, C.Aa. Diget, S. P. Fox, B. Fulton, N. Galinski, U. Greife, F. Herwig, R. Hirschi, D. Howell, L. Martin, D. Mountford, A. Murphy, M. Pignatari, S. Reeve, G. Ruprecht, S. Sjue, L. Veloce, *The first direct measurement of $^{17}\text{O}(\alpha,\gamma)^{21}\text{Ne}$ and its impact upon s-process abundances*, PoS(NIC-XI)(2010).
- K. Setoodehnia, A. A. Chen, **J. Chen**, J. A. Clark, C. Deibel, D. Kahl, W. N. Lennard, P. D. Parker and C. Wrede, *Study of astrophysically important resonant states in ^{30}S using the $^{32}\text{S}(p,t)^{30}\text{S}$ reaction*, EPJ Web of Conferences 2 (2010) 14005.
- K. Setoodehnia, A. A. Chen, **J. Chen**, J. A. Clark, C. Deibel, D. Kahl, W. N. Lennard, P. D. Parker and C. Wrede, *Study of astrophysically important resonant states in ^{30}S using the $^{32}\text{S}(p,t)^{30}\text{S}$ reaction*, J. Phys.: Conf. Ser. 202 (2010) 012042
- K. Setoodehnia, A. A. Chen, **J. Chen**, J. A. Clark, C. Deibel, D. Kahl, W. N. Lennard, P. D. Parker and C. Wrede, *Study of astrophysically important resonant states in ^{30}S using the $^{32}\text{S}(p,t)^{30}\text{S}$ reaction*, AIP Conf. Proc. 1213 (2010) 235-238
- D. Kahl, A. A. Chen, S. Kubono, D. N. Binh, **J. Chen**, T. Hashimoto, S. Hayakawa, D. Kaji, A. Kim, Y. Kurihara, N. H. Lee, S. Nishimura, Y. Ohshiro, K. Setoodeh nia, Y. Wakabayashi, H. Yamaguchi, *^{30}S Beam Development and X-ray Bursts*, AIP Conf. Proc. 1213 (2010) 208-214
- D. Kahl, A. A. Chen, S. Kubono, D. N. Binh, **J. Chen**, T. Hashimoto, S. Hayakawa, D. Kaji, A. Kim, Y. Kurihara, N. H. Lee, S. Nishimura, Y. Ohshiro, K. Setoodehnia, Y. Wakabayashi, and H. Yamaguchi, *$^{30}\text{S}(\alpha,p)$ in X-Ray Bursts at CRIB*, AIP Conf. Proc. 1269 (2010) 424-426.
- **J. Chen**, A. A. Chen, G. Amadio, D. Bazin, l , A. Becerril, A. M. Amthorc, S. Cherubini, M. La .Cognata, D. Galaviz, A. Gade, T. Glasmacher, H. Fujikawa, S. Hayakawa, N. Iwasa, J. J. He, D. Kahl, L. H. Khiem, S. Kubono, Y. Kurihawa, Y. K. Kwon, J. LeNestour, G. Lorusso, M. Matos, J. Y. Moon, M. Niikura, S. Nishimura, A. Odahara , C. V. Ouellet, J. Pearson, J. Pereira, R. Pizzone, A. Saito, H. Schatz, A. Signoracci, C. Signorini, A. Smith, K. Smith, T. Teranishi, Y. Togano, B. Wales, Y. Wakabayashi, D. Weisshaar, H. Yamaguchi, R. Zegers, *Study of the astrophysically important states in ^{26}Si via the $p(^{27}\text{Si},d)^{26}\text{Si}^*$ reaction and the $p(^{25}\text{Al},p)^{25}\text{Al}$ elastic scattering*, PoS(NIC X)153 (2008) 1-5.
- David Kahl, Alan A. Chen, Dam Nguyen Binh, **Jun Chen**, Takashi Hashimoto, Seiya Hayakawa, Aram Kim, Shigeru Kubono, Yuzo Kurihara, Nam Hee Lee, Shinichiro Michimasa, Shunji Nishimura, Christian Van Ouellet, Kiana Se-

toodehnia, Yasuo Wakabayashi, and Hidetoshi Yamaguchi, *^{30}S RI Beam Production and X-ray Bursts*, PoS(NIC X)171 (2008) 1-5.

- D. Kahl, A. A. Chen, **J. Chen**, S. Hayakawa, A. Kim, S. Kubono, S. Michimasa, K. Setoodehnia, , Y. Wakabayashi and H. Yamaguchi, *Radioactive ^{30}S Beam to Study X-Ray Bursts*, Astronomical Society of the Pacific Conference Series 393 (2008) 219-222.
- D. Kahl, A. A. Chen, **J. Chen**, S. Hayakawa, A. Kim, S. Kubono, S. Michimasa, K. Setoodehnia, Y. Wakabayashi, and H. Yamaguchi, *On the Waiting Point at $A=30$ in X-ray Bursts: $^{30}\text{S}(\alpha,p)^{33}\text{Cl}$ with CRIB*, CNS Annual Report 2006 CNS-REP-76(2007)1.
- **J. Chen**, A. Chen, G. Amadio, S. Cherubini, M. La Cognata, H. Fujikawa, S. Hayakawa, N. Iwasa, D. Kahl, S. Kubono, Y. Kurihara, Y. K. Kwon, J. Y. Moon, M Niikura, S. Nishimura, A. Odahara, J. Pearson, R. Pizzone, A. Saito, C. Signorini, T. Teranishi, Y. Togano, Y. Wakabayashi, and H. Yamaguchi, *Study of Astrophysically Important States in ^{26}Si through Elastic Scattering with CRIB*, CNS Annual Report 2006 CNS-REP-76(2007)5.

REFERENCES

- **Professor Dr. Alan A. Chen**
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