

E419 H. Tamura Measurement of B(E2) Transition Rate in ${}^7_{\Lambda}\text{Li}$ Hypernucleus

Submitted	
Approved	1997.7.22
Beam line	K6
Shift requested	70
Shift executed	84
Executed cycles	98[2,3,4]

Papers and activities

[Legend]

- Physics papers published in refereed journal
- Technical papers
- ★ PhD theses
- ◇ Conference and Symposium
- * Internal Report and others

- H. Tamura
Hypernuclear γ spectroscopy with a Ge ball
Nucl. Phys. A 639 (1998) 83c.
- H. Tamura et al.
High-resolution hypernuclear gamma-ray spectroscopy
Nucl. Phys. A 663 (2000) 481c.
- H. Tamura et al.
High-resolution gamma-ray spectroscopy of ${}^7_{\Lambda}\text{Li}$
Nucl. Phys. A 670 (2000) 249c.
- H. Tamura et al.
Observation of a spin-flip M1 transition in ${}^7_{\Lambda}\text{Li}$
Phys. Rev. Lett. 84 (2000) 5963-5966.
- K. Tanida et al.
Measurement of B(E2) of ${}^7_{\Lambda}\text{Li}$ and shrinkage of the hypernuclear size,
Phys. Rev. Lett. 86 (2001) 1982-1985.
- J. Sasao et al.
 ${}^7_{\Lambda}\text{Li}$ Ground-State Spin Determined by the Yield of γ Rays Subsequent to Weak Decay,
Phys. Lett. B 579 (2004) 258-264.
- H. Tamura
Experimental Progress in Hypernuclear Physics
Proc. 18th Nishinomiya Yukawa Memorial Symposium, Nishinomiya, December 4-5, 2003, Prog.
Theor. Phys. Suppl. 156, 104-123 (December, 2004).
- O. Hashimoto and H. Tamura
Spectroscopy of Λ hypernuclei
Prog. Part. Nucl. Phys. 57 (2006) 564-653.
- ★ K. Tanida
Gamma-Ray Spectroscopy of ${}^7_{\Lambda}\text{Li}$
Ph.D. Thesis, University of Tokyo, 2000.
- ◇ H. Tamura
Future Plans of High-Resolution Hypernuclear Gamma-Spectroscopy
Proc. APCTP Workshop on Strangeness Nuclear Physics (SNP'99), Seoul, February 1999.

-
- Physics papers published in refereed journal.
 - Technical papers.
 - ★ PhD theses.
 - ◇ Conference and Symposium.
 - * Internal Report and others.

- Strangeness Nuclear Physics, eds.I.T.Cheon, S.W. Hong and T.Motoba (World Scientific, 2000) 411.
- ◇ H. Tamura
Hypernuclear γ -Ray Spectroscopy,
Proc. Workshop on Strangeness and Nuclei '96, July 12-14, 1996, Tateshina, JHF-Supplement-22 (1996) p.5 (in Japanese).
 - ◇ K. Tanida
Hypernuclear γ -Ray Spectroscopy in KEK-E336,
Proc. Workshop on Strangeness and Nuclei '96, July 12-14, 1996, Tateshina, JHF-Supplement-22 (1996) p.8 (in Japanese).
 - ◇ H. Tamura
Hypernuclear γ -Ray Spectroscopy --Present Status,
Proc. Workshop on Strangeness and Nuclei '97, July 12-14, 1997, Tateshina, JHF-REP-6 (1997) p.8 (in Japanese).
 - ◇ K. Tanida
Hypernuclear γ -Ray Spectroscopy --Present Status 2,
Proc. Workshop on Strangeness and Nuclei '97, July 12-14, 1997, Tateshina, JHF-REP-6 (1997) p.11 (in Japanese).
 - ◇ K. Tanida
Hypernuclear γ -Ray Spectroscopy,
Proc. SUT-KEK Seminar on Nuclear Force and Hyperon Scattering, April 6-8, 1998, Science Univ. Tokyo, KEK Proceedings 99-2 (1999) p.107 (in Japanese).
 - ◇ K. Imai
 γ -Rays and Strangeness Nuclear Physics,
Proc. Workshop on Strangeness and Nuclei '98, November 23-25, 1998, Hakone, JHF-REP-6 (1997) p.51 (in Japanese).
 - ◇ H. Tamura,
Hypernuclear γ -Ray Spectroscopy,
Proc. Symp. On Frontier Nuclear Physics (FRONP9), August 2-4, 1999, JEARI, JAERE-Conf 99-015 (2000) p.3 (in Japanese).
 - ◇ H. Tamura
Origination of Hypernuclear γ -Ray Spectroscopy,
Proc. Joint Workshop on Unstable Nuclei and Hypernuclei, September 2-3, 1999, RIKEN, p.12 (in Japanese).
 - ◇ K. Tanida
 γ -Ray Spectroscopy of ${}^7_{\Lambda}\text{Li}$
Proc. Joint Workshop on Unstable Nuclei and Hypernuclei, September 2-3, 1999, RIKEN, p.20 (in Japanese).
 - ◇ H. Tamura
Gamma Spectroscopy of Light Hypernuclei,
Workshop on Hypernuclear Physics, INS Univ.of Tokyo, December 7-8, 1996, Genshikaku Kenkyu vol.41 No.6, 55.
 - ◇ H. Tamura et al.
High-resolution gamma-ray spectroscopy of ${}^7_{\Lambda}\text{Li}$
KEK-Tanashi Int. Symp. on "Physics of Hadrons and Nuclei", Tokyo, December 1998, Nucl. Phys. A670 (2000) 249c-256c.
 - ◇ K. Tanida et al.
Hypernuclear Gamma-Ray Spectroscopy Experiments with Germanium Detectors,
APCTP Workshop on Strangeness Nuclear Physics (SNP'99), Seoul, February 1999, "Strangeness Nuclear Physics", World Scientific (2000) p.98.
 - ◇ H. Tamura
Future Plans of High-Resolution Hypernuclear Gamma-Spectroscopy,
APCTP Workshop on Strangeness Nuclear Physics (SNP'99), Seoul, February 1999, "Strangeness

● Physics papers published in refereed journal.

○ Technical papers.

★ PhD theses.

◇ Conference and Symposium.

* Internal Report and others.

- Nuclear Physics", World Scientific (2000) p.411.
- ◇ H. Tamura
Hypernuclear physics with hadronic beams
Proc. Workshop on "Hypernuclear Physics with Hadronic Probes" (HYPJLAB99), Hampton, December 1999, in press.
 - ◇ H. Tamura
High-resolution spectroscopy of hypernuclei,
Workshop on JHF K-arena Physics, KEK, March 17-19, 1999, KEK proceedings 99-5, p.73.
 - ◇ H. Tamura et al.
High-resolution hypernuclear gamma-ray spectroscopy,
15th Int. Conf. of Particles and Nuclei (PANIC'99), Uppsala, June 1999, Nucl. Phys. A 663&664 (2000) 481c-484c.
 - ◇ H. Tamura et al.,
High-resolution gamma-ray spectroscopy of ${}^7_{\Lambda}\text{Li}$ and ${}^9_{\Lambda}\text{Be}$,
Asia Pacific Conf. on "Few Body Problems in Physics", Noda/Kashiwa, August 1999, Few-Body Systems Suppl. 12 (2000) 342-346.
 - ◇ K. Tanida, et al.
LN Spin Dependent Interactions Studied by γ -Ray Spectroscopy of Hypernuclei,
RCNP-TMU Symposium on "Spins in Nuclear and Hadronic Reactions", Tokyo Metropolitan University, October 26-28, 1999, World Scientific (2000) p.215.
 - ◇ K. Tanida et al.
High-Resolution Gamma-Ray Spectroscopy of Hypernuclei with Germanium Detectors,
16th Int. Conf. on "Few Body Problems", Taipei, March, 2000, Nucl. Phys. A 684 (2001) 560c.
 - ◇ H. Tamura et al.
Hypernuclear gamma spectroscopy recent results with HYPERBALL,
Int. Conf. on "Structure of the Nucleus at the Dawn of the Century" (Bologna 2000), Bologna, May 2000, "Hadrons, Nuclei and Applications", Ed. G.C. Bonsignori et al., World Scientific, p.106-109.
 - ◇ K. Imai
Recent Progress of Spectroscopy of Light Hypernuclei,
8th meeting in Mesons and Light Nuclei (Prague 2001), Prague, July 2001, AIP Conf. Proc. 603 (2001) 69-78.
 - ◇ H. Tamura,
Impurity Nuclear Physics –Hypernuclear γ spectroscopy and future plans for neutron-rich hypernuclei,
Int. Symp. on "Perspectives in Physics with Radioactive Isotope Beams" (RIB00), Hayama, November 2000, Eur. Phys. J. A 13 (2002) 181-187.
 - ◇ K. Tanida et al.
High-resolution gamma-ray spectroscopy of ${}^7_{\Lambda}\text{Li}$
Int. Conf. on Hypernuclear and Strange Particle Physics, (HYP2000), Torino, October 2000, Nucl. Phys. A 691 (2001) 115.
 - ◇ H. Tamura
High resolution spectroscopy of Λ hypernuclei present status and perspectives,
Int. Conf. on "Hypernuclear and Strange Particle Physics" (HYP2000), Torino, October 2000, Nucl. Phys. A 691 (2001) 76.
 - ◇ H. Tamura
Hypernuclear Studies at KEK and BNL, Gamma Spectroscopy of Λ Hypernuclei,
29th International Workshop on "Gross Properties of Nuclei and Nuclear Excitations" (Hirschegg '01), Hirschegg, Austria, January 14-20, 2001, "Hirschegg 2001--Structure of hadrons" GSI, (2001) 290-299.
 - ◇ H. Tamura
Hypernuclear gamma spectroscopy and ΛN interactions,
Int. Symp. on "Hadrons and Nuclei", Seoul, March 2001, Ed. Il-T. Cheon et al., AIP Conf. Proc.

● Physics papers published in refereed journal.

○ Technical papers.

★ PhD theses.

◇ Conference and Symposium.

* Internal Report and others.

- 594 (2001) 147-154.
- ◇ H. Tamura
Hyperball and a new frontier in hypernuclear physics,
Int. Workshop on "development of Ge detector array and frontiers of gamma-ray spectroscopy",
CNS, University of Tokyo, December 11-13, 2001, ISSN 1343-2230 CNS report CNS-REP-43,
p.159.
 - ◇ H. Tamura
Structure of Light Hypernuclei Studied by Gamma-Ray Spectroscopy,
Int. Symp. on "Clustering Aspects of Quantum Many-Body Systems" (POSTYK01), Kyoto,
November 2001, Ed. Ohnishi *et al.*, World Scientific (2002) p.49-57.
 - ◇ H. Tamura
Hypernuclear Gamma-Ray Spectroscopy --A Breakthrough in Strangeness Nuclear Physics,
4th Italy-Japan Symposium on "Perspectives in Heavy Ion Physics", RIKEN and University of
Tokyo, September 26 - 29, 2001, Ed. K. Yoshida et al., World Scientific (2003) p.401-412.
 - ◇ H. Tamura
Matter with Strangeness,
16th Int. Conf. on Particles and Nuclei (PANIC02), Osaka, September 30-October 4, 2002, Nucl.
Phys. A 721 (2003) 84c-93c.
 - H. Tamura
Experimental Progress in Hypernuclear Physics,
18th Nishinomiya Yukawa Memorial Symposium on "Strangeness in Nuclear Matter",
Nishinomiya, December 4-5, 2003, Prog. Theor. Phys. in press.
 - H. Tamura
Baryon-baryon interactions with strangeness studied from hypernuclei
The 22nd International Nuclear Physics Conference (INPC2004), Goetheborg, June 27-July 2,
2004.
 - H. Tamura
Gamma Spectroscopy of Hypernuclei
5th Italy-Japan Symposium on Recent Achievements and Perspectives in Nuclear Physics, Naples,
November 3-7, 2004.
 - * K. Tanida
Hypernuclei and γ -ray spectroscopy,
Genshikaku Kenkyu 45 No.5 (2000) 151 (in Japanese).
 - * H. Tamura and K. Tanida,
Origination of Hypernuclear Gamma Spectroscopy,
Butsuri (Physical Society of Japan) 56 (2001) 419 (in Japanese).
 - * H. Tamura
Shrinking strange nucleus --hypernuclei extending our concept of atomic nucleus,
Kagaku (Iwanami) 71 (2001) 1013 (in Japanese).
 - * H. Tamura
Hypernuclei and baryon-baryon interactions,
Genshikaku Kenkyu 46 No.4, 1 (in Japanese).
 - * K. Tanida
Construction of a Germanium Detector System for Hypernuclear Gamma-Ray Spectroscopy
Experiments,
Master Thesis, University of Tokyo (1997).
 - * S. Satoh
Study of BGO Compton Suppressors for Hypernuclear Gamma Spectroscopy,
Master Thesis, Tohoku University (1999) (in Japanese).
 - * J. Sasao
Weak-Decay Branching Ratios of ${}^7_{\Lambda}\text{Li}$ Studied by γ Spectroscopy,
Master Thesis, Tohoku University (2000) (in Japanese).
 - * The Incredible Shrinking Nucleus,

● Physics papers published in refereed journal.

○ Technical papers.

★ PhD theses.

◇ Conference and Symposium.

* Internal Report and others.

Physical Review Focus, 1 March 2001.

- * Quark Quirk Triggers Nuclear Shrinkage,
Science 291, 9 March 2001, p.1877.
- * Teeny-weeny --Japanese scientists unveil their incredible shrinking nucleus,
New Scientist 24, March 2001, p.13.

-
- Physics papers published in refereed journal.
 - Technical papers.
 - ★ PhD theses.
 - ◇ Conference and Symposium.
 - * Internal Report and others.