

8. List of Original Papers

This list includes main publications by the staff members issued during the period from April 1, 2007 to March 31, 2007

* Outside Co-research

Research Center for Charged Particle Therapy

Developing Advanced Clinical Therapy with Charged Particle

1. Tatsuya Ohno, Shingo Kato, Eisaku Sasaki *, Katsumi Mizutani *, Hirohiko Tsujii : Carbon ion radiotherapy for vaginal malignant melanoma : a case report, *International Journal of Gynecological Cancer*, 17 (5), 1163-1166, 2007, doi : 10.1111/j.1525-1438.2007.00951. x (2007-04-19)
2. Pawinee Mahasittiwat *, Junetsu Mizoe, Azusa Hasegawa, Hiroyuki Ishikawa, Kyosan Yoshikawa, Hideyuki Mizuno, Takeshi Yanagi, Ryo Takagi, Pittyapoom Pattaranutaporn *, Hirohiko Tsujii : L-[methyl-11C] Methionine positron emission tomography for target delineation in malignant gliomas : impact on results of carbon ion radiotherapy., *International Journal of Radiation Oncology Biology Physics*, 70 (2), 515-522, 2008, doi : 10.1016/j.ijrobp. 2007.06.071 (2007-09-27)
3. Daniela Schulz Ertner *, Hirohiko Tsujii : Particle Radiation Therapy Using Proton and Heavier Ion Beams, *Journal of Clinical Oncology*, 25 (8), 953-964, 2007
4. Tadaaki Miyamoto, Masayuki Baba, Toshio Sugane, Mio Nakajima, Tomoyasu Yashiro, Kenji Kagei, Naoki Hirasawa, Toshiyuki Sugawara, Naoyoshi Yamamoto, Masashi Koto *, Hidefumi Ezawa, Kennosuke Kadono, Hirohiko Tsujii, Junetsu Mizoe, Kyosan Yoshikawa, Susumu Kandatsu, Takehiko Fujisawa * : Carbon Ion Radiotherapy for Stage I Non-small Cell Lung Cancer Using a Regimen of Four Fractions during 1 Week, *Journal of Thoracic Oncology*, 2 (10), 916-926, 2007
5. Shinichiro Mori, Masahiro Endo, Syuhei Komatsu, Tomoyasu Yashiro, Susumu Kandatsu, Masayuki Baba : Four-Dimensional Measurement of Lung Tumor Displacement Using 256-Multi-Slice CT-Scanner, *Lung Cancer*, 56 (1), 59-67, 2007
6. Nobuyuki Kanematsu, Masami Torikoshi, Manabu Mizota, Tatsuaki Kanai : Secondary range shifting with range compensator for reduction of beam data library in heavy-ion radiotherapy, *Medical Physics*, 34 (6), 1907-1910, 2007
7. Masayuki Baba, Akira Iyoda *, Yasushi Nomoto *, Kiyoshi Shibuya *, Kennzou Hiroshima *, Hiroko Saito, Akemi Taguchi *, Katsuhiko Kounoike *, Fumie Saegusa *, Takeichiro Kuwahara *, Hirohiko Tsujii, Takehiko Fujisawa * : Cytological findings of pre-invasive bronchial lesions detected by light-induced fluorescence endoscopy in a lung cancer screening system, *Oncology Reports*, 17 (3), 579-583, 2007
8. Masahiko Sawajiri, Shuuichi Takinami, Takashi Uchida *, Yuuji Nomura, Junetsu Mizoe, S. Banik *, Keiji Tanimoto * : Expression of MMP-13 in osteoblast cells and rat tibia after exposure to gamma rays or accelerated carbon ions, *Physica Medica*, 23 (2), 73-79, 2007, doi:10.1016/j. ejmp. 2007.03.005 (2007-05-18), 23 (2), 73-79
9. Yuuki Kase, Tatsuaki Kanai, Naruhiro Matsufuji, Yoshiya Furusawa, et al. : Biophysical calculation of cell survival probabilities using amorphous track structure models for heavy-ion irradiation, *Physics in Medicine and Biology*, 53 (1), 37-59, 2008, doi: 10.1088/0031-9155/53/1/003 (2007-12-12), 53 (1), 37-59
10. Masaharu Hoshi *, Takeshi Toyoda *, A. Ivannikov *, K. Zhumadilov *, Akifumi Fukumura, K. Apsalnikov *, Zh. S. Zhumadilov *, S. Bayankin *, V. Chumak *, B. Ciesielski *, V. De Coste *, Satoru Endo *, P. Fattibene *, D. Ivanov *, C. A. Mitchell *, S. Onori *, M. Penkowski *, S. P. Pivovarov *, A. Romanyukha *, A. B. Rukhin * : Interlaboratory comparison of tooth enamel dosimetry on Semipalatinsk region: Part 1, general view, *Radiation Measurements*, 42 (6-7), 1005-1014, 2007
11. Masashi Koto *, Hirohiko Tsujii, Naoyoshi Yamamoto, Hideki Nishimura *, Syougo Yamada *, Tadaaki Miyamoto : Dosimetric Factors Used for Thoracic X-Ray Radiotherapy are not Predictive of the Occurrence of Radiation Pneumonitis after Carbon-Ion Radiotherapy, *The Tohoku Journal of Experimental Medicine*, (213), 149-156, 2007

Research on the Next-generation Irradiation System

1. Tetsumi Tanabe *, Evgeni Starikov *, Kouji Noda : Mechanism of protonation of oligopeptides and their interaction with alkali cations, *Chemical Physics Letters*, 449, 202-207, 2007, doi:10.1016/j. cplett. 2007.10.059 (2007-11-07), 449, 202-207
2. Shinichiro Mori, Kanae Nishizawa, Chisato Kondo, Mari Ohno, Keiichi Akahane, Masahiro Endo :

- Effective Doses in Subjects undergoing Computed Tomography Cardiac Imaging with the 256-Multislice CT Scanner, *European Journal of Radiology*, 65 (3), 442-448, 2008
3. Shinichiro Mori, George Chen *, Masahiro Endo : Effects of Intrafractional Motion on Water Equivalent Pathlength in Respiratory-gated Heavy Charged Particle Beam Radiotherapy, *International Journal of Radiation Oncology Biology Physics*, 69(1), 308-317, 2007
 4. Shinichiro Mori, George Chen *, et al. : QUANTITATIVE ASSESSMENT OF RANGE FLUCTUATIONS IN CHARGED PARTICLE LUNG IRRADIATION, *International Journal of Radiation Oncology Biology Physics*, 70 (1), 253-261, 2008, doi:10.1016/j.ijrobp.2007.08.049 (2008-12-17), 70 (1), 253-261
 5. Masami Torikoshi, Shinichi Minohara, Nobuyuki Kanematsu, Masataka Komori, Mitsutaka Kanazawa, Kouji Noda, Nobuyuki Miyahara, Hiroko Ito, Masahiro Endo, Tatsuaki Kanai : Irradiation System for HIMAC, *Journal of Radiation Research*, 48(Suppl. A), A15-A25, 2007, <http://jrr.jstage.jst.go.jp> (2007-03-31), 48 (Suppl. A), A15-A25
 6. Kouji Noda, Takuji Furukawa, Takashi Fujisawa, Yoshiyuki Iwata, Tatsuaki Kanai, Mitsutaka Kanazawa, Atsushi Kitagawa, Masataka Komori, Shinichi Minohara, Takeshi Murakami, Masayuki Muramatsu, Shinji Satou, Yuka Takei, Mutsumi Tashiro *, Masami Torikoshi, Satoru Yamada, Ken Yusa * : New Accelerator Facility for Carbon-Ion Cancer-Therapy, *Journal of Radiation Research*, 48 (Suppl. A), A43-A54, 2007, <http://jrr.jstage.jst.go.jp> (2007-03-31), 48 (Suppl. A), A43-A54
 7. Yohsuke Kusano *, Tatsuaki Kanai, Yuuki Kase, Naruhiro Matsufuji, Masataka Komori, Nobuyuki Kanematsu, et al. : Dose contributions from large-angle scattered particles in therapeutic carbon beams, *Medical Physics*, 34 (1), 193-198, 2007, DOI:10.1118/1.2402328(2006-12-20), 34(1), 193-198
 8. Yohsuke Kusano *, Tatsuaki Kanai, Shunsuke Yonai, Masataka Komori, et al. : Field-size dependence of doses of therapeutic carbon beams, *Medical Physics*, 34 (10), 4016-4022, 2007, DOI:10.1118/1.2779126 (2007-09-26), 34 (10), 4016-4022
 9. Takuji Furukawa, Taku Inaniwa, Shinji Satou, Shinichi Minohara, Kouji Noda, Tatsuaki Kanai, et al. : Design study of a raster scanning system for moving target irradiation in heavy-ion radiotherapy, *Medical Physics*, 34 (3), 1085-1097, 2007
 10. Taku Inaniwa, Toshiyuki Kohno *, Fumiko Yamagata, Takehiro Tomitani, Shinji Satou, Mitsutaka Kanazawa, Tatsuaki Kanai, Eriko Urakabe * : Maximum likelihood estimation of proton irradiated field and deposited dose distribution, *Medical Physics*, 34 (5), 1684-1692, 2007, DOI: 10.1118/1.2712572 (2007-05-25), 34 (5), 1684-1692
 11. Taku Inaniwa, Takuji Furukawa, Takehiro Tomitani, Shinji Satou, Kouji Noda, Tatsuaki Kanai : Optimization for fast-scanning irradiation in particle therapy, *Medical Physics*, 34 (8), 3302-3311, 2007, DOI: 10.1118/1.2712572 (2007-07-26), 34 (8), 3302-3311
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 13. Shunsuke Yonai, Nobuyuki Kanematsu, Masataka Komori, Tatsuaki Kanai, Yuka Takei : Evaluation of beam wobbling methods for heavy-ion radiotherapy, *Medical Physics*, 35 (3), 927-938, 2008, doi:10.1118/1.2836953 (2008-02-19), 35 (3), 927-938
 14. Yoshiyuki Iwata, Satoru Yamada, Takeshi Murakami, Tetsuya Fujimoto *, Takashi Fujisawa, Hirotsugu Ogawa, Nobuyuki Miyahara, Kazuo Yamamoto, Satoru Houjou, Yukio Sakamoto, Masayuki Muramatsu, Takeshi Takeuchi *, et al.: Performance of a compact injector for heavy-ion medical accelerators, *Nuclear Instruments & Methods in Physics Research Section A*, 572, 1007-1021, 2007
 15. Shinji Satou, Takuji Furukawa, Kouji Noda : Dynamic intensity control system with RF-knockout slow-extraction in the HIMAC synchrotron, *Nuclear Instruments & Methods in Physics Research Section A*, 574 (2), 226-231, 2007
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 18. Tomohiro Miyoshi *, Kouji Noda, H Tawara *, Viatcheslava Shevelko *, et al. : Distribution of exit silicon ions over excited states after penetrating through carbon foils at 2.65, 4.3 and 6.0 MeV/u, *Nuclear Instruments & Methods in Physics Research Section B*, 258 (2), 329-339, 2007

19. Cary Zeitlin*, Stephen B Guetersloh, Lawrence Heilbronn*, Jack Miller*, Akifumi Fukumura, Yoshiyuki Iwata, Takeshi Murakami: Fragmentation cross sections of 290 and 400 MeV/nucleon ¹²C beams on elemental targets, *Physical Review C*, 76, 014911-1-014911-21, 2007, doi:10.1103/PhysRevC.76.014911 (2007-07-01), 76, 014911-1-014911-21
20. Toshiyuki Shirai*, Masahiro Ikegami*, Shinji Fujimoto*, Mikio Tanabe*, HTongu*, Akira Noda*, Kouji Noda, Tetsuya Fujimoto*, Souma Iwata*, Shinji Shibuya*, Alexander Smirnov*, IMeshkov*, Hicham Fadil*, Manfred Grieser*: One-Dimensional Beam Ordering of Protons in a Storage Ring, *Physical Review Letters*, 98 (20), 204801-1-204801-4, 2007, doi:10.1103/PhysRevLett.98.204801 (2007-05-16), 98 (20), 204801-1-204801-4
21. Hiroko Ito, Tatsuaki Kanai, Shinichi Minohara, Hiroshi Tsuji, Hirohiko Tsujii: Carbon ion therapy for ocular melanoma: planning orthogonal two-port treatment, *Physics in Medicine and Biology*, 52 (17), 5341-5352, 2007, doi:10.1088/0031-9155/52/17/016 (2007-08-16), 52 (17), 5341-5352
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24. Masahiro Endo, Shinichiro Mori, Susumu Kandatsu, Shuji Tanada, Chisato Kondo: Development and performance evaluation of the second model 256-detector row CT, *Radiological Physics and Technology*, 1 (1), 20-26, 2007, doi:10.1007/s12194-007-0004-z (2007-11-01), 1 (1), 20-26
25. Rie Tanaka*, Shinichiro Mori, Masahiro Endo: Volumetric tracking tool using four-dimensional CT for image guided-radiation therapy, *Radiological Physics and Technology*, 1 (1), 38-43, 2008, doi: 10.1007/s12194-007-0006-x(2007-11-12), 1(1), 38-43
26. Shinichiro Mori, Hiroshi Asakura*, Tomoyasu Yashiro, Motoki Kumagai, Susumu Kandatsu, Masayuki Baba, Masahiro Endo, et al.: Design of a Compensating Bolus by Use of Exhalation CT Data for Covering Residual Motion in Respiratory-Gated Charged-Particle Lung Therapy: Four-Dimensional Carbon Beam Dose Calculation, *Radiological Physics and Technology*, 1 (1), 83-88, 2007, doi:10.1007/s12194-007-0012-z (2007-11-27), 1 (1), 83-88
- Standardization and Improvement of Therapeutic and Diagnostic Techniques***
1. Shinichiro Mori, Takayuki Obata, Hirotoshi Katou, Riwa Kishimoto, Susumu Kandatsu, Shuji Tanada, Masahiro Endo: Preliminary study: Color Map of Hepatocellular Carcinoma Using Dynamic Contrast-Enhanced 256-Row Detector CT, *European Journal of Radiology*, 62 (2), 308-310, 2007
2. Akifumi Fukumura, Yoshiyuki Iwata, Takeshi Murakami, Cary Zeitlin*, Lawrence Heilbronn*, Jack Miller*: Fragmentation cross sections of 290 and 400Mev/nucleon ¹²C Beams on Elemental Targets, *Physical Review C*, 76 (014911), 21-21, 2007
3. Shin Toyoda*, Masaharu Hoshi*, Akifumi Fukumura, Ken-ichi Tanaka*, Satoru Endo*, A. Ivannikov*, K. Zhumadilov*, K. Apsalikov*, Zh. S. Zhumadilov*, S. Bayankin*, V. Chumak*, B. Ciesielski*, V. De Coste*, P. Fattibene*, D. Ivanov*, C. A. Mitchell*, S. Onori*, M. Penkowski*, S. P. Pivovarov*, A. B. Rukhin*, K. Schultka*, T. A. Seredavina*, S. Sholom*, V. Skvortsov*, V. Stepanenko*, F. Trompier*, A. Wieser*, G. Wolakiewicz*, A. Nalapko*, D. Sanin*, A. Romanyukha*: Interlaboratory comparison of tooth enamel dosimetry on Semipalatinsk region: Part 2, Effects of spectrum processing, *Radiation Measurements*, 42 (6-7), 1015-1020, 2007
- RadGenomics Project for Radiotherapy***
1. Miyako Nakawatari, Mayumi Iwakawa, Tatsuya Ohno*, Shingo Kato, Tomoaki Tamaki, Kaori Imadome, Minako Sakai, Hirohiko Tsujii, Takashi Imai: Chemoradiation-induced Expression of Fibroblast Growth Factor-2 and Laminin in Patients with Cervical Cancer., *Cancer Biology & Therapy*, 6 (11), 1780-1786, 2007
2. Mayumi Iwakawa, Tatsuya Ohno, Kaori Imadome, Miyako Nakawatari, Ken-ichi Ishikawa, Minako Sakai, Shingo Katoh, Hitoshi Ishikawa, Hirohiko Tsujii, Takashi Imai: The Radiation-Induced Cell-Death Signaling Pathway is Activated by Concurrent Use of Cisplatin in Sequential Biopsy Specimens from Patients with Cervical Cancer., *Cancer Biology & Therapy*, <http://www.landesbioscience.com/journals/cbt/article/IwakawaCBT6-6.pdf> (2007-06-02), 6 (6), e1-e7
3. Yoshitaka Matsumoto, Mayumi Iwakawa, Yoshiya Furusawa, Kenichi Ishikawa, Mizuho Aoki, Kaori Imadome, Izumi Matsumoto, Hirohiko Tsujii, Koichi Ando, Takashi Imai: Gene expression analysis in human malignant melanoma cell lines exposed to carbon beams, *International Journal of Radiation*

- Biology, 84 (4), 299-314, 2008, DOI : 10.1080/09553000801953334 (2008-03-01)
4. Tomo Suga, Atsuko Ishikawa, Masakazu Kohda, Yoshimi Otsuka, Shigeru Yamada, Naohito Yamamoto, Yuta Shibamoto, Yoshihiro Ogawa, Kuninori Nomura, Keizen Sho, Motoko Omura, Kenji Sekiguchi, Yuzou Kikuchi, Yuichi Michikawa, Shuhei Noda, Masashi Sagara, Jun Ohashi, Shinji Yoshinaga, Junetsu Mizoe, Hirohiko Tsujii, Mayumi Iwakawa, Takashi Imai : Haplotype-based analysis of genes associated with risk of adverse skin reactions after radiotherapy in breast cancer patients., *International Journal of Radiation Oncology Biology Physics*, 69 (3), 685-693, 2007, doi : 10.1016/j.ijrobp. 2007.06.021 (2007-09-26)
 5. Masaru Wakatuki, Tatsuya Ohno*, Mayumi Iwakawa, Hitoshi Ishikawa, Shuhei Noda, Toshie Ohta, Shingo Kato, Hirohiko Tsujii, Takashi Imai, Takashi Nakano* : p73 Protein expression correlates with radiation-induced apoptosis in the lack of p53 response to radiation therapy for cervical cancer., *International Journal of Radiation Oncology Biology Physics*, 70 (4), 1189-1194, 2008
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 7. Hiroshi Watanabe, Masahiko Miura, Ryo-ichi Yoshimura, Hitoshi Shibuya, Shuhei Noda, Mayumi Iwakawa, Takashi Imai, et al. : Prediction of Lymphatic Metastasis Based on Gene Expression Profile Analysis after Brachytherapy for Early-Stage Oral Tongue Carcinoma, *Radiotherapy and Oncology*, 87 (2), 237-242, 2008, doi : 10.1016/j. radonc. 2007.12.027 (2008-01-25)
 8. Yuichi Michikawa, Tomo Suga, Yoshimi Ohtsuka, Izumi Matsumoto, Atsuko Ishikawa, Kenichi Ishikawa, Mayumi Iwakawa, Takashi Imai : Visible genotype sensor array, *Sensors* (Online Only URL: <http://www.mdpi.org/sensors/>), www.mdpi.org/sensors/papers/s8042722.pdf (2008-04-17), 8, 2722-2735
- Biological Research Concerning the Improvement of Radiation Therapy***
1. Kailash Manda, Kazunori Anzai, et al. : Melatonin attenuates radiation-induced learning deficit and brain oxidative stress in mice, *Acta Neurobiologiae Experimentalis*, 67, 63-70, 2007
 2. Fumio Yatagai*, Hiroshi Umebayashi*, Masao Suzuki, Tomoko Abe*, Hiromi Suzuki*, Toru low-dose-rate ionizing radiation on mutation induction in human cells., *Advances in Space Research*, 40, 470-473, 2007
 3. Yukihiko Hama*, Kenichiro Matsumoto, et al. : Continuous wave EPR oximetric imaging at 300 MHz using radiofrequency power saturation effects, *Antioxidants & Redox Signaling*, 9 (10), 1709-1716, 2007
 4. Kenichiro Matsumoto, et al. : Spatially resolved biologic information from in vivo EPRI, OMRI, and MRI, *Antioxidants & Redox Signaling*, 9 (8), 1125-1142, 2007
 5. Kailash Manda, Megumi Ueno, Kazunori Anzai : Memory impairment, oxidative damage and apoptosis induced by space radiation : Ameliorative potential of alpha-lipoic acid, *Behavioural Brain Research*, 187 (2), 387-395, 2008
 6. Akira Fujimori, Wang Bing, Katsutoshi Suetomi, Eimiko Sekine, Dong Yu, Takamitsu Kato, Sentaro Takahashi, Ryuichi Okayasu, et al.: Ionizing radiation downregulates ASPM, a gene responsible for microcephaly in humans, *Biochemical and Biophysical Research Communications*, 369 (3), 953-957, 2008, doi : 10.1016/j. bbrc. 2008.02.149 (2008-03-19)
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 8. Ryo Kominami*, Ohtsura Niwa : Radiation carcinogenesis in mouse thymic lymphomas, *Cancer Science*, 97 (7), 575-581, 2006
 9. Ichiro Niina*, Takeshi Uchiumi*, Hiroto Izumi*, Takayuki Torigoe*, Tetsuro Wakasugi*, Tomonori Igarashi*, Naoya Miyamoto*, Takamitsu Onitsuka*, Masaki Shiota*, Ryuichi Okayasu, Kazuo Chijiwa*, Kimitoshi Kohno* : DNA topoisomerase inhibitor, etoposide, enhances GC-box-dependent promoter activity via Sp1 phosphorylation, *Cancer Science*, 98 (6), 858-863, 2007, doi : 10.1111/j. 1349-7006.2007.00476. x (2007-04-17)
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 19. Takamitsu Kato, Hatsumi Nagasawa*, Christy Warner*, Ryuichi Okayasu, Joel S. Bedford* : Cytotoxicity of cigarette smoke condensate is not due to DNA double strand breaks : Comparative studies using radiosensitive mutant and wild-type CHO cells, *International Journal of Radiation Biology*, 83, 583-591, 2007
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