Schweizerische Gesellschaft für Strahlenbiologie und Medizinische Physik
Société Suisse de Radiobiologie et de Physique Médicale
Società Svizzera di Radiobiologia e di Fisica Medica

SGSMP
SSRPM
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BULLETIN
2/2013

No. 78 Dec 2013

Online Bulletin: http://www.sgsmp.ch

BULLETIN 78

December 2013

Cover image: Château de Neuchâtel, venue for the recent SSRMP annual meeting in November

President`s Letter

Dear colleagues,

The 2013 annual meeting took place in Neuchâtel on the 14th and 15th of November. J.-F. Germond and the organizing committee did an excellent job of the preparation and the result was that we enjoyed a very nice meeting. The invited speakers gave high quality presentations which were very interesting. I was also impressed by the level of the selected oral presentations. The quality is better each year, showing that medical physics is really alive in Switzerland! I would like to deeply thank Jean-François Germond for the organization of the meeting. We really enjoyed the science, but also the very fine atmosphere of Neuchâtel.

Between the last Bulletin and this one, the board has had three meetings. Here are some of the decisions that were taken and some information from us.

The board elected S. Klöck as vice-president, W. Roser as treasurer and D. Vetterli as secretary. As defined by the statutes, the board also elected the members of our three permanent committees. Here is the composition of them:

- Science committee (chair P. Manser): S. Bulling, M. Pachoud and S. Scheib.
- Education committee (chair: H. Roser): F. Corminboeuf, P. Cossmann, S. Klöck, G. Kohler, G. Lutters, R. Moeckli, R. Müller and A. Pfäfflin.
- Professional affairs (chair: F. Corminboeuf): S. Klöck, S. Presilla, J.-Y. Ray.

There have been preliminary discussions about the new radiation protection ordinance that is currently under revision. In particular, the question of the definition of the medical physicist is sensitive. After the “education workshop” that took place in Bern the 21st of August, the Society has been asked by BAG to propose a paragraph for the description of the medical physicist. Having heard different positions during the “education workshop”, the board will make a proposition to BAG before the end of the year. What can be said at this stage is that the recognition of medical physicists should be validated by a national authority. This would improve the strength of our certification and make discussions for the recognition of foreign qualifications easier.

The board also decided to give financial support from SSRMP for the organization of the 2013 intercomparison. You will find the report from this intercomparison with the main results in the following pages. I would like to thank H. Schiefer for his commitment to that task. As usual, a lot of you were keen to participate in the intercomparison.

Looking further ahead, it has now been decided that our 2014 annual congress will be a “Dreiländertagung” and will take place in Zürich from September 7th to 10th. Be prepared to attend this huge meeting.

Next year will also be the 50th anniversary of our Society. W. Roser (chair), J. Roth, W. Seelentag and R. Seiler have been asked by the board to organize an event to mark that anniversary. You will find preliminary information in this Bulletin.

As usual, there is a lot of information from our society and interesting content in the Bulletin and your participation by sending reports, reviews, information, etc is really encouraged. By the way, even if it seems repetitive, I have to acknowledge our editors for the work that they

do to compile the Bulletin. Thanks a lot!

I wish you a Merry Christmas and a Happy New Year.

Enjoy your Bulletin and meilleures salutations de Lausanne!

Raphaël Moeckli

Deadlines

Deadline for abstract submission	31 March 2014
Earlybird registration	1 July 2014

President's annual report

Dear Colleagues,

"I don't have enough time!" This is a sentence that we hear very often in a hospital. And it's true! There are more patients, more complex techniques, more machine time is required for each patient, more… The demand is increasing because the technology is evolving faster than we are able to implement it with the time that we have available. Our workload is also increasing, paradoxically, because computers are becoming more and more important in our profession. We come back from conferences where we have seen nice treatment techniques and our physicians ask us why we don't have it in our department? We do hypofractionation, stereotaxy, VMAT hybrid treatments, SIB head and neck tomotherapy treatments, Cyberknife tracking, etc... We would like to do proton treatments, high dose-rate irradiations and have access to carbon ion beams. We would like to improve the security of the patients, to implement new techniques, to do a PhD in medical physics…

It may be time to ask ourselves if we are not doing too many things? But we can also raise the question differently - in the context of the very high dynamism that exists in radiation therapy, wouldn't it be a good idea to increase the number of medical physicists in these dynamic departments? And don't we need not only "senior" medical physicists, but also positions for young physicists who would like to become medical physicists? The actual ordinance on linear accelerators requires that a department must hire at least one medical physicist per linear accelerator. But that ordinance was issued in 2005. How many Swiss centres were treating their patients with IMRT and/or stereotactic techniques at that time? What was the equipment profile of our departments at that time? Nowadays, is one medical physicist still enough to ensure the quality of the treatments and the security of our patients in the face of the increasing complexity that we encounter each day? I think that asking the question is answering it! We need more medical physicists and more training positions to face not only the future challenges, but also the present ones. Well, this is easy to say, but maybe more difficult to obtain. Nevertheless, the best way to go in that direction is to continue working hard each day and to demonstrate that a strong team of medical physicists in a department is the guarantee of quality and security for patients.

Coming back to the past year, here is a review of some of the activities that the SSRMP has been involved in during 2013. A lot of additional information is included in the permanent committee reports.

There were three board meetings during the year. As in previous years, there was an excellent atmosphere during the board meetings. There was unanimous support for all of the decisions taken and the board members share the same vision for the future of our profession. Among the decisions and discussions of the board, and the achievements of our society in 2013, here are some of the important points:

• BAG

We met twice with BAG. As usual, different matters were discussed. A large part of the discussions were dedicated to the definition of the medical physicist in the revision of the ordinance. BAG asked the board to propose a definition and we will send it before the end of the year.

In the context of the revision of the ordinance, we also discussed the future of the CIRS system. BAG informed us that they would like to take over that task. As we already felt in the past, they think that such a system cannot to be handled by volunteers and they will try to get funding for this task. We have informed BAG that we would almost certainly support such a structure.

Another nice piece of news is that our colleague Sébastien Baechler will take the lead of the radiation protection division of BAG from April 2014. It is good news that a medical physicist will occupy such an important position in radiation protection. Congratulations to him.

• Bulletin

There have been two editions of the Bulletin, including this one. Shelley Bulling and Regina Müller are warmly thanked for their work. Don't forget to participate by sending papers, information, feedback, etc…

• Website

A new harmonised website is almost ready. The new website is expected for the end of 2013.

• Professional committee (Frédéric Corminboeuf), education committee (Hans Roser) and science committee (Peter Manser)

There is more information about the activities of these committees later in this Bulletin.

However, here are some of the highlights from the committees:

Thirteen out of seventeen candidates have successfully passed the examination for SSRMP certification in medical physics. A warm welcome to these new colleagues!

The annual continuing education day took place on the 13th of September in Bern. The subject was "rotational therapies". Thank you to the excellent speakers. We had a very informative day. I would also like to thank Peter Manser for the organisation of that event!

We are setting up a collaboration with SRO in the field of education. As you know, some of our colleagues are giving lectures for the FMH education cursus of radio-oncologists. We have asked SRO to do the same for us, i.e. to give lectures in basic clinical radiation oncology for our medical physicists in training. We also have decided that the continuing education day in 2014 will be organized jointly with SRO.

The 2013 intercomparison was financially supported by SSRMP and is now finished. The results for conventional linacs are, as usual, very good. For Tomotherapy, a probable conceptual problem led to strange results. Further analysis will be performed in order to take this into account for the next intercomparison. I would like to thank the St-Gallen team, and particularly Hans Schiefer, for the time that they spent on organizing and performing the intercomparison.

The 2013 research grant has been awarded to Carles Goma from PSI for a PSI-METAS joint project on reference dosimetry for proton beams. Congratulations!

• Annual Congress 2013

The annual SSRMP congress 2013 (the correct terminology should be "Journées scientifiques" in French) took place in Neuchâtel the 14th and 15th of November. Sitting in the "Salle du Grand Conseil neuchâtelois" we had the privilege to hear about all topics related to

our profession: radiology, nuclear medicine, radiation protection, radiobiology and radiotherapy. I really enjoyed the magnificent location (a chateau!) and the very friendly atmosphere of the meeting. This is certainly due to the legendary sense of hospitality that the canton and the city of Neuchâtel provide to their hosts. But this is also, and mainly, due to Jean-François Germond and his wife Christiane. They gave a lot of their time to make the congress absolutely the best that it could be. And they succeeded! I would therefore like to say a warm "Thank you!" to them, on the behalf of all the members of our Society, for this successful meeting. I would like to also thank the staff of the IRA office for their work and all the speakers, chairpersons, companies, etc…, for their participation.

Looking to the future, I realize that it will be my last year as president of SSRMP. It has been a great honour for me to serve the society in this role and I will continue to do my best to serve the interests of medical physics in Switzerland in the future.

However, this also means that next year you will have to elect a new president and also a new board. For this reason, I encourage you to consider being a candidate for one of the positions that will be open in the next general assembly.

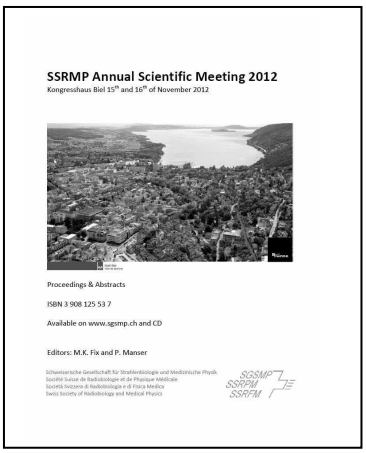
Our Society needs to have experienced people in the board, but it also needs young and fresh minds to push forward our profession. Therefore, do not hesitate to be a candidate next year!

Finally, I would like to thank all the people active in our society. Their commitment is of major importance in the dynamism of our Society. I also would like to welcome anybody willing to take an active part in our Society. There is room for everyone!

Raphaël Moeckli, Lausanne, le 2 décembre 2013

Proceedings for the 2012 annual meeting

The proceedings for the 2012 annual meeting are now available online in pdf format



http://www.sgsmp.ch/2012/Proceedings-SGSMP2012-Biel.pdf

Education Committee News

An update about SSRMP educational activities was presented by Hans Roser and Tony Lomax during the AMP meeting held in Bern on June 28th (report below).

This meeting was followed by workshop held in Bern on August 21st to discuss the education of medical physicists.

Results of the Certification Exams in Medical Physics (SSRMP)

In the exams for the certification in medical physics SSRMP 2013 (22.10. - 04.11.2013) the following persons succeeded (13 out of 17 candidates):

Yasar Avcu, Basel (Universitätsspital)
Christian Gromoll, Marienhospital, D – Stuttgart
Elisabeth Henrich, Inselspital Bern
Archonteia Kyroudi, Lausanne (CHUV)
Natacha Ruiz Lopez, Lausanne (CHUV)
Sheeba Thengumpallil, Lausanne (CHUV)
Michele Zeverino, Lausanne (CHUV)
Dirk Boye, Aarau (Kantonssspial)
Geoffroy Guibert, La Chaux-de-Fonds
Maria Dolores Herraiz-Lablanca, Liestal
Claudia Lenz, Basel (Unispital)
Eleni-Theano Samara, Hôpital de Sion
Stephan Zepter, Aarau (Kantonsspital)

On behalf of the examination committee and the SSRMP board I want to congratulate the candidates for their certification and the new position in the community connected to that.

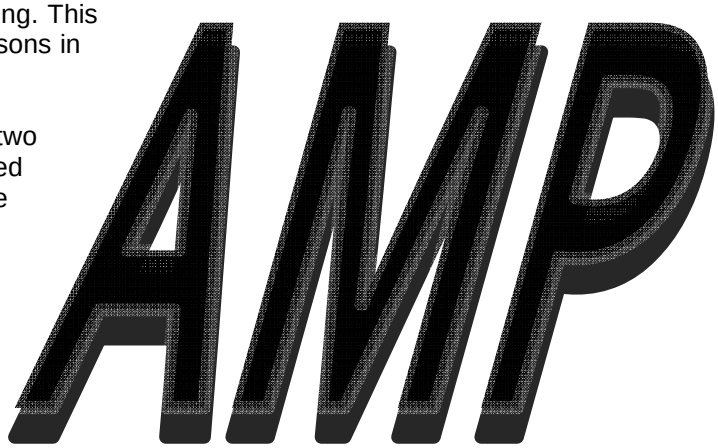
Stephan Klöck, Zürich, 05.11.2013"

Next Applied Medical Physics (AMP) Meeting

It is my pleasure to announce the next AMP meeting. This meeting is a general platform for all interested persons in medical physicists.

Traditionally, the AMP meeting is split up into two parts. In the first part, a dedicated topic is discussed while in the second part we concentrate on the current state of the different working groups of SSRMP.

Thus, please mark your calendar:



February 28, 2014, 13.15-16.45h, University of Bern

Detailed information will be provided by the SSRMP mailing list, only.
=> Subscribe now on www.sgsmp.ch

Peter Manser, Chair of SSRMP Science Committee and Chair of AMP

Scientific Committee News

Summary of the AMP Meeting (Bern, June 28, 2013)

On June 28, 2013 an AMP meeting took place with dedicated focus on educational issues. Although there were not many participants at this AMP meeting, we had a good discussion and some important next steps were taken.

In the first part, Tony Lomax (PSI) and Hans Roser (University of Basel) gave a short presentation on either ETH related or SSRMP related educational aspects in medical physics. Tony Lomax presented the backgrounds and the structure of the newly established track of Medical Physics in the Masters in Biomedical Engineering at ETH Zurich. It is important to note that this is not replacing the well-established MAS in Medical Physics (the traditional "Nachdiplomstudium") but it is complementary to that. In brief, the new track is one of five possible tracks within the Masters in Biomedical Engineering program. If a student selects this track, he/she has to choose different lectures during two semesters. The first semester is more or less pre-defined while in the second semester more flexibility for the individual students is provided. In the third semester, the student has to perform a master thesis. More information is available on the website of the Masters in Biomedical Engineering (http://www.master-biomed.ethz.ch/).

Hans Roser gave an overview about the current status of new guidelines for the SSRMP certification in medical physics. There are several reasons why these guidelines need to be updated and it is planned to have a revision ready later this year. At the AMP meeting, we discussed several issues and it was decided to establish a dedicated workshop where a more detailed discussion can take place and where different key players can put their visions onto the table. It is foreseen to have such a workshop on August 21, 2013.

In the second part of the AMP meeting, we concentrated firstly on the revision of recommendation Nr. 11 about linac QA. The working group sent a draft version to the science committee of SSRMP. On behalf of this group, Daniel Vetterli (Inselspital Bern) summarized the major revisions. It is planned to have this revised recommendation approved by 2013.
At the beginning of 2013, a new working group was established which concentrates on the revision of recommendations Nr. 8, 9, and 10. Stephanie Lang (USZ Zurich) is chairing this group and the current status of the work was discussed. One important aspect is the fact that this year's TLD inter-comparison will be supported by this working group.
Gerd Lutters (KSA Aarau) is chairing a new working group focusing on topics of Art. 74/7. A first meeting took place and it was decided to establish recommendations about measurement procedures and to get statistics on the applied doses in order to optimize the dose. A next meeting is planned on August 20, 2013.

Eventually, Uwe Schneider (Hirslanden Aarau and Zurich) gave a short summary about the status of the Zeitschrift für Medizinische Physik. The impact factor raised again and reached now the value of 1.407 and Uwe Schneider provided some detailed statistics about key parameters with respect to publishing.

Many thanks for your attendance and your contributions!

Peter Manser, Chair of AMP

SSRMP Research Grant Announcement 2014

In order to support and promote the scientific activities of our members in Switzerland active in all fields of Medical Physics, a research grant is provided by SGSMP. As in the last years, a financial grant of maximum **7'000 CHF** is offered for research projects fulfilling proper eligibility criteria.

The projects should:

- be promoted by at least one regular member of SGSMP
- be conducted entirely in Switzerland in one of the private or public institutes active in the field
- preference will be given to projects involving more than one institute aiming to a trans-linguistic and trans-cultural cooperative model
- be strictly linked to a field of interest of SGSMP
- be completed within the time span of one year from grant assignment

The group that will be awarded the grant will have to provide the SGSMP Science Committee with a detailed report (inclusive of costs justification) at the end of the one-year period and will guarantee the publication of a scientific report in the SGSMP Bulletin. The scientific report should be, pending scientific committee's review and approval, submitted for oral contribution to the annual SGSMP meeting.

Deadline for submission of proposals is March 31st 2014.

Proposals should not exceed four A4 pages and should contain:

- project title, duration and financial request
- principal investigator's and co-investigator's names and responsibilities in the project
- short description of the scientific background
- short but detailed description of the project
- short description about current state of the art in the field

Proposals should be submitted to the chair of the SGSMP Science Committee:
Peter Manser, Div. of Medical Radiation Physics, Inselspital, 3010 Bern.

Varian Award for Radiation Oncology of SSRMP

Deadline for submission: March 31st 2014

Award rules:

1. SSRMP can award during the annual general assembly up to three Varian prizes. The maximum amount for a single Varian prize is SFr. 3'000.-. Varian Medical System Inc. donate to SSRMP each year SFr. 3'000.- for the Varian prize.

2. The prizes are given to single persons or to groups, which have made an excellent work in radiobiology or in medical physics. Members of SSRMP or groups with at least one member of SSRMP are legitimate to attend with a manuscript or with a published or unpublished paper of special importance, special originality or special quality. The size of the work should not exceed the normal size of a paper. A thesis normally exceeds this size. The person, who enters a paper written by more than one author, should have contributed the major part to this paper. The consent of the co-authors must be documented.

3. The winner gets the prize amount, as well as a diploma with an appreciation.

4. The invitation for the Varian prize is published in the bulletin of SSRMP. Direct applications or recommendations of other persons can be sent to the President of SSRMP. The documents should be entered in four specimens not later than six month before the annual meeting.

5. A prize committee judges the entered works. It consists at least of three members of SSRMP and is elected or reelected for 2 years by the SSRMP board. At least one member of the prize committee should be member of the SSRMP board.

6. The prize committee constitutes itself. The decision of award together with the appreciation should be sent to the board for approval.

7. Varian Medical Systems Inc. is indebted to announce in written form each change of the prize amount or a termination of the contract to the president of SSRMP at least one year in advance.

8. This regulation was accepted by Varian Medical Systems Inc. (Switzerland) September 27th, 2006 and renewed by the annual assembly of SSRMP September 27th, 2007. It can be changed only with the approval of Varian Medical Systems by a decision of the annual assembly of SSRMP.

Peter Manser, Inselspital – University of Bern
President of the Varian Prize Committee

Professional Affairs Committee News

Invitation to SSRMP Education Course on "Medical physics in Radiology and Nuclear Medicine"

Dear Colleagues,

SSRMP is going to offer two 2-day courses for medical physicists already involved or getting involved soon in medical physics in the fields of diagnostic radiology or nuclear medicine.

The aim of the course is to review the physics of diagnostic radiology and nuclear medicine to ensure that the education of the SSRMP certified medical physicists complies with article 74.7 of the Swiss Radiological Protection Ordinance requirements. The course will review the scope of the tasks, duties and responsibilities that should be performed by SSRMP certified medical physicists to give the required support in nuclear medicine applications, fluoroscopy-guided interventional radiology and computed tomography.

Please note that only a limited number of places (15) will be available for each course.

Subject: Diagnostic Radiology

- Quality assurance relating to patient dose:
  - Reliability of the displayed dose indicators (CTDI, DLP, DAP)
  - Verification of the X-ray beam collimation
  - Behavior of the X-ray tube modulation
  - Level of image quality produced for a given dose level
  - Adequacy of the imaging protocols with DRLs
- Patient dose estimation and verification:
  - Phantom measurements
  - Dose modeling
  - Analyzing individual patient dose protocols and comparison to DRLs
- Patient and staff dose optimization
- Legal aspect of radioprotection.
- Task of medical physicist in radiology.
- Practice (1 day).

Venue: **Lausanne**
Date and Time: **31st of March– 1st of April 2014**
Fee: **700 CHF**

Register by completing the registration form and sending it back **before 28th February 2014**.

Subject: Nuclear Medicine

- Quality assurance relating to patient dose of a gamma camera and PET systems:
  - Level of image quality produced for a given activity
  - Correlation between algorithms and image quality
  - Adequacy of the imaging protocols with DRLs

- Patient dose estimation and verification:
  - Phantom measurements
  - Dose modeling
  - Analyzing individual patient dose protocols and comparison to DRLs
- Patient and staff dose optimization
- Legal aspect of radioprotection.
- Task of medical physicist in nuclear medicine.
- Practice (1 day).

Venue: **Zürich, UniSpital**
Date and Time: **24th – 25th of April 2014**
Fee: **700 CHF**

Register by completing the registration form and sending it back **before 28th February 2014**.

We are looking forward to seeing you in Lausanne and/or in Zürich.

Frédéric Corminboeuf, Chair of Professional Affairs Committee

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Registration

SSRMP Education Course on
"Medical physics in Radiology and Nuclear Medicine"

Title: * ☐ Dr. ☐ Ms. ☐ Mr. ☐ Prof. ☐ Prof. Dr.

Name: * _____

First name: * _____

Institution/company: _____

Department: _____

Address: * _____

_____

Zip: * _____

City: * _____

Phone: _____

Fax: _____

Mobile: _____

E-mail: * _____

I register for
☐ Radiology course (31st of March– 1st of April 2014, Lausanne)
☐ Nuclear medicine course (24th – 25th of April 2014, Zürich)

Signature :

Please return by mail, fax or E-mail as soon as possible.

Address: **Centre de Radio-Oncologie La Source**
Av. De Vinet 30
Corminboeuf Frédéric
CH – 1004 **Lausanne**

E-mail: f.corminboeuf@lasource.ch
Tel: +41 21 642 70 11
Fax: +41 21 642 70 09

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SWISS SOCIETY FOR RADIATION BIOLOGY AND MEDICAL PHYSICS (SSRMP)

AWARDS

ROGER HÄLG

WITH THE

VARIAN MAIN AWARD 2013

FOR THE WORK

SYSTEMATIC MEASUREMENTS OF WHOLE-BODY IMAGING DOSE DISTRIBUTIONS IN IMAGE-GUIDED RADIATION THERAPY

THIS AWARD AIMS TO EXPRESS THE APPRECIATION OF A THOROUGHLY PERFORMED WORK BY WHICH AN IMPORTANT TOPIC IN RADIATION THERAPY IS COVERED AND WHICH IS THE BASIS FOR FUTURE STUDIES. THE WORK FOCUSES ON THE IMAGING DOSE ASSESSMENT OF IMAGE-GUIDED RADIATION THERAPY. FOR THIS PURPOSE, MEASUREMENTS IN AN ANTHROPOMORHIC PHANTOM HAVE BEEN PERFORMED FOR TYPICAL IMAGING PROCEDURES. THE METHODS ARE CLEARLY DESCRIBED AND THE RESULTS WERE COMPARED TO THE WHOLE-BODY RADIATION DOSE RESULTING FROM THERAPEUTIC STRAY RADIATION OUTSIDE OF THE TREATMENT VOLUME. THIS COMPARISON IS UNIQUE AND VERY USEFUL FOR THE ENTIRE RADIATION THERAPY COMMUNITY. IMPORTANT CONCLUSIONS CAN BE DRAWN FROM THIS STUDY SUCH AS THE STATEMENT THAT THE ADDITIONAL DOSE BURDEN FOR PATIENTS TREATED WITH IMAGE-GUIDED RADIATION THERAPY IS LOWER THAN USUALLY ASSUMED.

NEUCHATEL, 14. NOVEMBER 2013

CHAIR OF THE VARIAN PRIZE COMMITTEE

PRESIDENT OF SSRMP

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SWISS SOCIETY FOR RADIATION BIOLOGY AND MEDICAL PHYSICS (SSRMP)

AWARDS

GIOVANNA DIPASQUALE, PHILIPPE NOUET, MICHEL ROUZAUD, ANGELE DUBOULOZ, RAYMOND MIRALBELL, THOMAS ZILLI

WITH THE

VARIAN RECOGNITION AWARD 2013

FOR THE WORK

IN VIVO THERMOLUMINESCENT DOSIMETRY ASSESSMENT OF TARGET DOSE DELIVERY USING IMAGE-GUIDANCE AND VOLUMETRIC MODULATED ARC THERAPY FOR ANO-RECTAL CANCER TREATMENT

THIS AWARD AIMS TO EXPRESS THE APPRECIATION OF A THOROUGHLY PERFORMED WORK BY WHICH AN IMPORTANT TOPIC IN RADIATION THERAPY IS COVERED AND WHICH IS THE BASIS FOR FUTURE STUDIES. THE AUTHORS OF THIS WORK ADDRESS THE PROBLEM OF ASSESSING THE DOSE DISTRIBUTION IN VIVO FOR ANO-RECTAL CANCER PATIENTS UNDERGOING VOLUMETRIC MODULATED ARC THERAPY. THE METHODS ARE CLEARLY DESCRIBED AND THE RESULTS DEMONSTRATE THAT TLD-BASED DOSIMETRY HELPS TO VALIDATE AND MONITOR DELIVERED DOSES IN PATIENTS.

NEUCHATEL, 14. NOVEMBER 2013

CHAIR OF THE VARIAN PRIZE COMMITTEE

PRESIDENT OF SSRMP

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Schweizerische Gesellschaft für Strahlenbiologie und Medizinische Physik
Société Suisse de Radiobiologie et de Physique Médicale
Società Svizzera di Radiobiologia e di Fisica Medica

Swiss Society of Radiobiology and Medical Physics
Member of the European Federation of Organisations for Medical Physics (EFOMP) and the International Organization for Medical Physics (IOMP)

50th anniversary of our society

Date: Wednesday November 12th, 2014

Location: Swiss Museum of Transport (Lucerne), Auditorium Hans Erni

A program will be developed including a series of presentations of different medical physics topics, a free lunch, a special poster session, a printed booklet, a CD, ... → details will follow.

Organizing Committee:

Werner Roser (Villigen PSI)
Jakob Roth (Arisdorf)
Wolf Seelentag (St. Gallen)
Regina Seiler (Luzern)

Welcome to the following new SSRMP members 14.11.13

Alonso	Sara	Aarau
Barletta	Enrico	Bern
Belosi	Maria Francesca	Bellinzona
Fredh	Anna	Villigen PSI
Gomà	Carles	Villigen PSI
Hanauer	Nicolas	Basel
Icken	Niels	Aarau
Käser	Yvonne	Uetikon a.S.
Miéville	Frédéric	La Chaux-de-Fonds
Pinto Monedero	Maria	Aarau
Ryckx	Nick	Lausanne
Schopfer	Mathieu	Lausanne
Simmler	Roland	Aarau
Staudacher	Martin	Aarau
Taranenko	Valery	Lausanne

Win a free SSRMP membership in 2015!

Dear members of SSRMP

Some of you have already paid the membership fee for 2014 – thank you very much! The others will find the bill for the upcoming year enclosed with this bulletin.

A free membership for 2015 will be raffled among those ordinary members of SGSMP, who will pay their membership fee for 2014 of **Fr. 50.--** not later than January (receipt as non-cash until January 31st, 2014 on our account; cash deposits produce bank charges and are thus excluded from the lottery).

The lucky winner will be announced in the next bulletin.

Werner Roser

Postkonto: 10-14793-4
IBAN: CH57 0900 0000 1001 4793 4
BIC: POFICHBEXXX

Dr. Werner Roser, Kassier
Paul Scherrer Institut
CH-5232 Villigen PSI

Tel. 056 310 3514
E-Mail: werner.roser@psi.ch

Results of the TLD intercomparison 2013

It was the aim of this year's SSRMP intercomparison to check the absolute dosimetry of photon beams in a solid water phantom. The reference measurements have been performed in cooperation with Anton Steiner, METAS.

Altogether 30 institution participated in the intercomparison. 123 beams have been checked.

Material and Methods

The same TLD's, tempering oven and TLD reader have been used as in earlier intercomparisons. The cobalt machine for reference measurements was used from METAS. Additionally, in this year's intercomparison film measurements have been performed in cooperation with Nathan Corradini, Clinica Luganese. For this, EBT3 Gafchromic films were used. The measurements using films will, however, not be discussed in the scoope of this report.

The first phantom used for LINACs consisted of the same components as used for the photon dosimetry performed in 2011. The solid phantom was composed of two stacked Perspex phantom frames. The inner square was 4 cm in length, the outer diameter 10 cm x 10 cm. The frames have been filled with five plain RW3 (PTW Freiburg). blocks, and one block containing three TLDs The block dimensions have been 40 mm x 40 mm x 10 mm. The phantom was placed on Perspex or water equivalent material (at minimum 5 cm). It is shown schematically in figure 1.

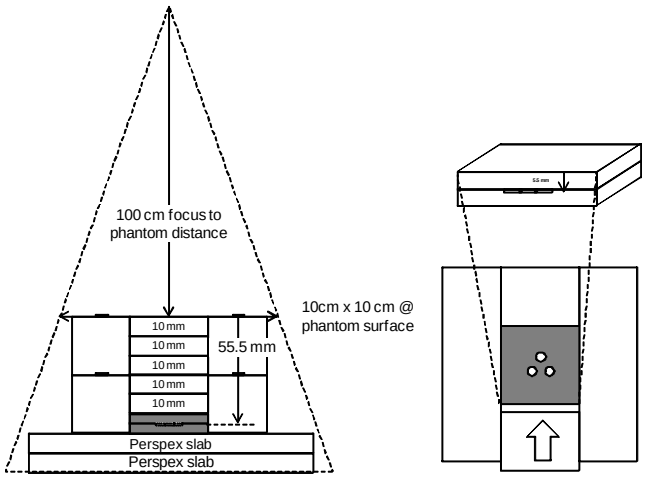


Figure 1: Frontal (left) and top view (right) of the solid phantom for photon dosimetry.

The measurement depth was 55.5 mm. The water equivalent material in the beam path next to the TLD's ensured that the percentage depth dose was comparable to the percentage depth dose in water.

The measurement setup for photon irradiations in the solid phantom was for all irradiations as follows: Dose to the TLD's as exact as possible 1.00 Gy; field size 10 cm x 10 cm, focus to surface distance 100 cm.

The second phantom used for Tomotherapy was constructed on the basis of the phantom used in the RPC dosimetry audit. It is composed of two Perspex legs and a Perspex cylinder. The legs measure 110mm in height, 60 mm in width and 10 mm in depth. The cylinder has a diameter of 35 mm and a length of 120 mm. The cylinder has an axial bore hole with a diameter of 8.5 mm and a length of 72.5 mm in order to hold a cartridge containing five TLDs. The Tomotherapy Phantom including a cartridge filled with five TLDs is shown in figure 2.

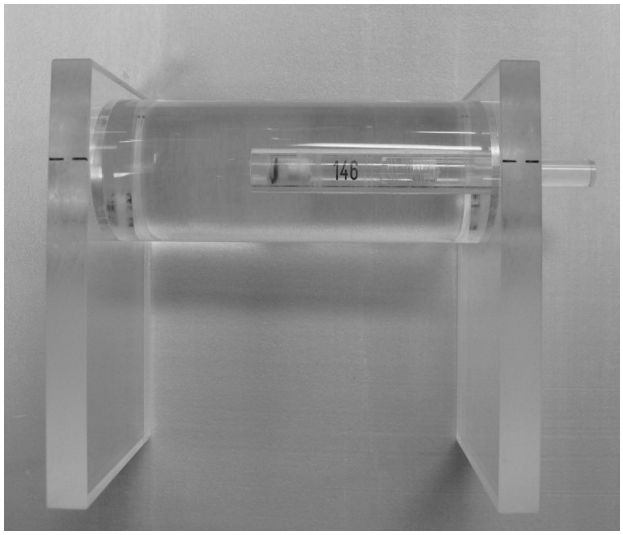


Figure 2: Frontal view of the assembled Tomotherapy phantom including a cylindrical cartridge filled with five TLDs.

For the Tomotherapy measurement, a CT scan of the Phantom was taken to create a clinical treatment plan. The target covers the entire length of the cylinder between the legs and has a diameter of 30 mm within the cylinder. A uniform dose of 1.00 Gy was delivered to this target.

Further details on the photon dosimetry setups for Linacs and Tomotherapy are shown in the "instructions" which are appended to this report.

Results

Results for 29 institutions

The results for 118 Linac beam evaluations are presented in figure 3. To evaluate the results, the ratio of the measured dose (D_m) to the stated dose (D_s) is examined. The energy separated mean D_m/D_s values are close to 1; the mean D_m/D_s value including all beams is 0.998 ± 0.013. This means that the TLD calibration corresponds to the (mean) dosimetry of the institutions.

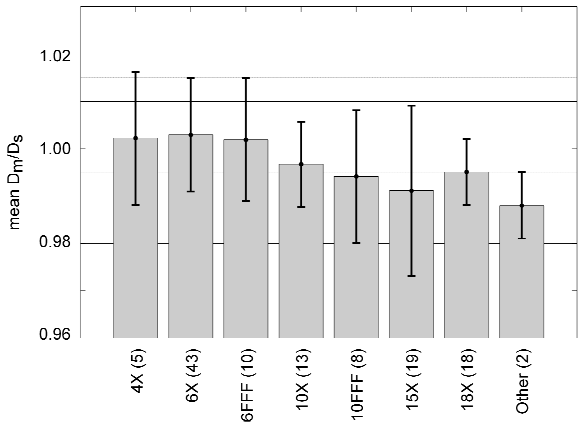


Figure 3: D_m/D_s values for 29 institutions and 118 beams. The number of beams is stated in brackets.

The histogram in figure 4 shows the distribution of the D_m/D_s values for all tested Linac beams. 117 out of 118 beams are within 3% of the tolerance, which is considered as a satisfactory check. One beam shows a deviation larger than 6%.

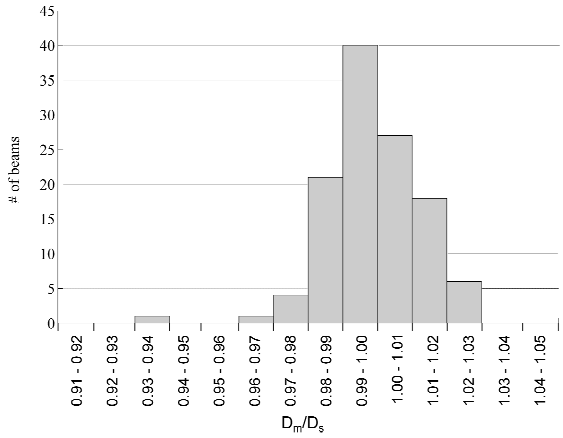


Figure 4: Histogram of D_m/D_s values for 29 institutions and 118 beams.

When the most deviating D_m/D_s value is excluded, the mean standard deviation is 1.2%.

The mean D_m/D_s value for the Tomotherapy measurements is 1.04 ± 0.04.

Discussion and Conclusion

The measured Linac doses of 117 out of 118 checked beams (99.2%) coincide with the stated ones within 3% and fulfil therefore the dosimetric requirement. 89.8% of all D_m/D_s values are within the [0.98, 1.02] interval, and 56.8% within the [0.99, 1.01] interval.

The Tomotherapy results (5 beams checked) are discussed separately since the outcome is not conforming to the expectation. 80% of the D_m/D_s values are more than 3% out of tolerance. This might indicate the unsuitability of the cylindrical phantom used in this intercomparison. To investigate possible reasons, further measurements are needed.

At the end, we thank all institutions for their pleasing co-operation.

L. Ahnen H. Schiefer

New working group for absolute dosimetry

At the beginning of this year a new SGSMP working group was formed on reference dosimetry of megavoltage photon beams, electron beams and kilovoltage photon beams.

We are happy to announce that we found 15 SGSMP members from 10 different Swiss institutes to work on these topics.

The working group aims to revise the SGSMP recommendations 8, 9 and 10.

After METAS changed their calibration procedure over three years ago, it is time to adapt our protocols to these changes. Additionally the working group supports the SGSMP TLD intercomparison.

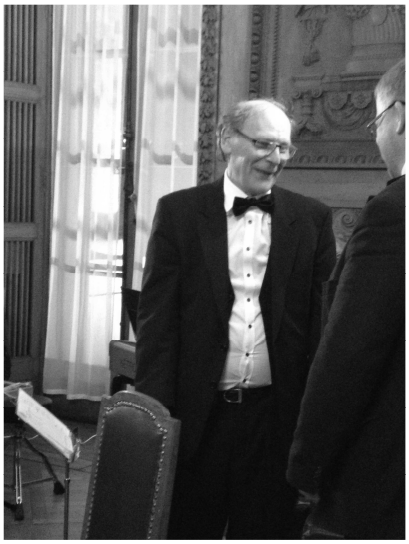
The first meeting took place in January and a second meeting in May this year. During the second meeting Hans Schiefer presented us the interim solution for this year's intercomparison, which took place between August and October this year and was a joint effort between St. Gallen, CHUV and METAS.

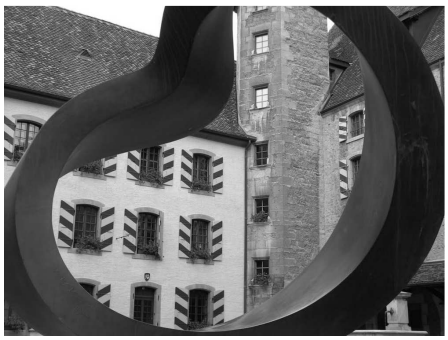
Additionally topics were discussed which need to be addressed in the new protocols. For all three protocols we see a need to revise the stated uncertainties. Additionally the group agreed that the four eyes principle should be applied to absolute dosimetry whenever possible and that final checking of dose should always be done in the clinical treatment mode.

We will update you on the group activities in the next SGSMP Bulletins. If somebody is interested in joining, please let us know, everybody is highly welcome.

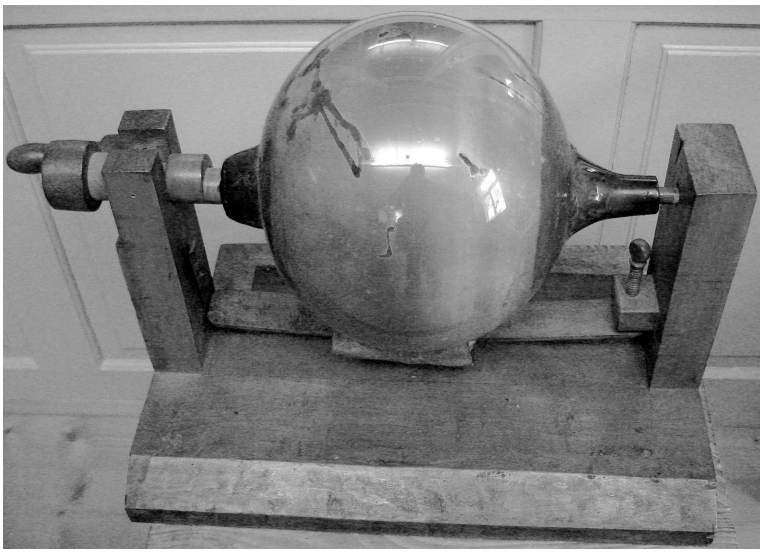
Authors: SGSMP Working group on reference dosimetry
Contact for the working group: Stephanie Lang Stephanie.Lang@usz.ch

SGSMP paparazzi





What is it ?



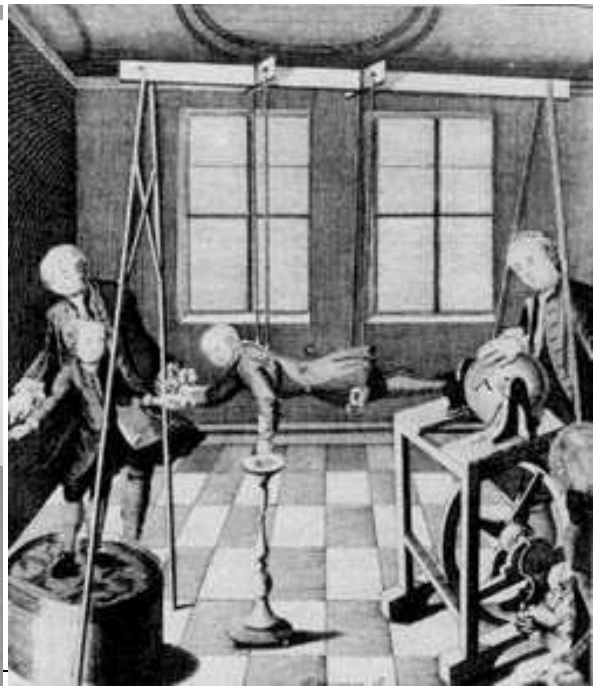
Medical Physics (or at least a somewhat related topic) may even follow you when you go on an excursion with your genealogical society. On the way to the State Archives in Herisau (AR) we had a short guided tour through the old part of the village (they don't call themselves a city!), including the village museum (stained glass windows with coats of arms). When our guide heard that I was a physicist, he asked me to have a look at one of their items ... and tell him what it was.

The item consists of a hollow glass ball, held in a wooden frame, so it can be rotated. Some sort of textile can be pressed onto it with variable pressure. So it clearly had to do with triboelectricity ... but what exactly is / was it?

My guess is a triboelectricity generator, similar to Stephen Gray's electricity experiments in the early 18th century (below right). These generators were quite popular during the 19th century as well; compared with the example (below left) the "Herisau machine" would be missing a few bits. As what is now the village museum also was used as school in earlier times, it could be a relict of their "physics collection".

Colour images may be viewed on http://www.seelentags.de/sonst/glasobjekt.htm.

Wolf Seelentag, St.Gallen



PERSONALIA

Sara Alonso

I graduated in Physics at the University of Sevilla (Spain). I took a Master's degree in Radiation Physics, Medical Applications, at University College of London, and I did the grade-A training in Medical Physics (UK "residency") at the Royal Free Hospital, London. After that, I joined the Royal Marsden Hospital (Chelsea, London), where I worked as a Radiotherapy Physicist for three years. Back in Spain, I have been employed as a full time Medical Physicist in two hospitals in Valencia for the last nine years (ERESA and Hospital Clinico).
I joined the KSA Radiotherapy team on the 1st July.

Sara Alonso Arrizabalaga, Klinik für Radio-Onkologie, Kantonsspital Aarau, Tellstrasse, 5001 Aarau, sara.alonso@ksa.ch

Dirk Boye

Um die Arbeit als Medizinphysiker kennenzulernen, war ich nach meinem Physik-Studium 6 Monate am Kantonsspital Aarau tätig. Die Arbeit hat mir sehr Spass gemacht und so habe ich mich endgültig für die Medizinphysik entschieden.
In der darauffolgenden Zeit habe ich eine Doktorarbeit mit dem Thema "Applications of 4D-MRI in proton therapy" am Paul Scherrer Institut absolviert. Um meine Programmierkenntnisse zu vertiefen, habe ich im Anschluss an meine Doktorarbeit ein Praktikum bei Google gemacht.
Seit April 2013 bin ich wieder am Kantonsspital Aarau, wo meine Tätigkeitsbereiche der Strahlenschutz und die Radiologie sind.
Meine neuen Adressdaten sind:
Dirk Boye, Kantonsspital Aarau, Radiologie, Tellstrasse, 5001 Aarau, dirk.boye@ksa.ch

Maria Pinto

At the Universidad Complutense (Madrid, Spain) I graduated in Physics. In 2009 I finished a Master Degree in Biomedical Physics. Between 2010 and 2013 I participated at a three year long residency program at Hospital Puerta de Hierro Majadahonda (Madrid, Spain). The program included both areas: Radiation Protection and Radiation Oncology. At the moment, I work at the Radiation Protection Department at Kantonsspital Aarau.
Maria Pinto Monedero, Kantonsspital Aarau, Klinik für Radio-Onkologie, Tellstrasse, 5001 Aarau, maria.pinto@ksa.ch

PERSONALIA

Niels Icken

Seit Januar 2013 habe ich mein Physikstudium an der Freien Universität Berlin mit dem Grad Diplom-Physiker abgeschlossen. Meine Diplomarbeit habe ich am Universitätsklinikum Charité angefertigt, wobei ich mit der ESR Spektroskopie sowie mit Hilfe entsprechenden Simulationen die Penetrationseigenschaften von Nanopartikeln in der Haut untersucht habe. Seit September 2013 arbeite ich im Kantonsspital Aarau als Medizin-Physiker i.A. Da ich die SGSMP - Fachanerkennung als Medizinphysiker anstrebe, werde ich im Oktober 2014 den Studiengang MAS Medizin-Physik an der ETH Zürich beginnen.

Véronique Vallet

Dr Véronique Vallet has been appointed deputy head physicist in the radiotherapy physics group of the Institute of Radiation Physics (IRA). She will be responsible for all clinical aspects of medical physics in the radiotherapy department of CHUV. Dr Vallet got a PhD in the field of biomechanics in 2004. She has worked at IRA since 2007 and she obtained her SSRMP certification of medical physics in 2009. PD Dr Raphaël Moeckli remains head physicist and will be responsible for development, research and the implementation of new techniques in the department. We congratulate Véronique for her promotion!

IMPRESSUM

Herausgeber: Schweizerische Gesellschaft für Strahlenbiologie und Medizinische Physik (SGSMP/SSRPM/SSRFM)

Druck: Druckerei PSI

Redaktion:

Shelley Bulling
Centre d'Oncologie Eaux-Vives
26 rue Maunoir
1207 Genève
Tel. 022 319 77 30
sbulling@eaux-vives.com

Regina Müller
Paul Scherrer Institut
Schule für Strahlenschutz
5232 Villigen PSI
Tel. 056 310 2480
regina.mueller@psi.ch

Nathan Corradini
Clinica Luganese
Via Moncucco 10
6900 Lugano
Nathan.Corradini@clinicaluganese.ch

Sekretariat der SGSMP: c/o Silvia Kleiner
Bernstr. 103a
3052 Zollikofen,

Daniel Vetterli
Radio-Onkologiezentrum Biel
Rebenweg 38
2501 Biel
Tel.: 032 366 8111
daniel.vetterli@radioonkologie.ch

AUTORENHINWEISE

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Redaktionsschluss für das Bulletin Nr. 79 (03/2014): 02.2014

Title	Name (Function)	Professional Address	Tel. Office * = Sekretariat ** = Zentrale	E-Mail
PD MER Dr.	**Raphaël Moeckli** President	Inst. Univ. de Radiophysique (IRA) Rue du Grand-Pré 1 1007 Lausanne	021 314 46 18 021 314 80 68* & **	raphael.moeckli@chuv.ch
Dr.	**Stephan Klöck** Vice-president	Radio-Onkologie / Medizinische Physik Universitätsspital Zürich Rämistr. 100 8091 Zürich	044 255 34 62 044 255 29 31 * 044 255 11 11 **	stephan.kloeck@usz.ch
Dr. phil. nat.	**Daniel Vetterli** Secretary	Radio-Onkologiezentrum Biel Rebenweg 38 2503 Biel	032 366 81 15 032 366 81 11*	daniel.vetterli@radioonkologie.ch
Dr. phil. II	**Werner Roser** Treasurer	Paul Scherrer Institut 5232 Villigen PSI	056 310 35 14 056 310 27 20*	werner.roser@psi.ch
Dr. sc. nat.	**Peter Manser** Chair science committee	Abteilung für Medizinische Strahlenphysik Insel-spital - Universität Bern 3010 Bern	031 632 37 71 031 632 24 29 * 031 632 21 11 **	peter.Manser@insel.ch
Dr.	**Hans W. Roser** Chair education committee	Radiologische Physik Universitätsspital Basel Petersgraben 4 4031 Basel	061 328 61 42 061 265 25 25 **	Hans.Roser@usb.ch
Dr. rer. nat.	**Frédéric Corminbœuf** Chair Professional Affairs	Centre de Radio-Oncologie Clinique la Source Av. Vinet 30 1004 Lausanne	021 642 70 00	f.corminboeuf@lasource.ch
Dr. med.	**Markus Notter**	Service de Radiotherapie Hôpital Neuchâtelois 2303 La Chaux-de-Fonds	032 967 21 51* 032 967 21 11**	markus.notter@ne.ch
MSc.	**Jean-Yves Ray**	Service de radio-oncologie Hôpital de Sion Grand-Champsec 80 1951 Sion	027 603 45 12 027 603 45 00 * 027 603 40 00 **	jean-yves.ray@hopitalvs.ch