

EURADOS Working Programme on Internal and External Dosimetry

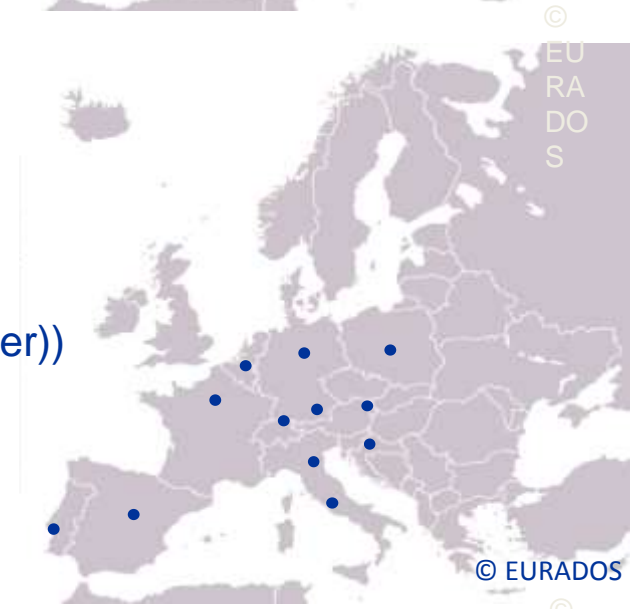
October 10th, 2017
ICRP 4th Symposium
Second ERPW
Paris, France

W. Rühm
Institute of Radiation Protection
Department of Radiation Sciences
Helmholtz Zentrum München, German Research Center for Environmental Health (HMGU)



EURADOS (as of March 2017)

- **Mission**
Promote research and development in dosimetry
Contribute to harmonisation in dosimetric practice
- **Voting Member Status (March 2017)**
72 Voting Members from 30 countries
- **EURADOS Board of Officers**
Chair: W. Rühm (HMGU, Germany)
Vice-Chair: F. Vanhavere (SCK-CEN, Belgium)
Secretary: JF. Bottollier (IRSN, France)
Treasurer: H. Schumacher (PTB, Germany)
- **EURADOS Office**
operated by HMGU (W Rühm, J Brehme, (H. Schuhmacher))
- **EURADOS Council**
J. Alves, J.F. Bottollier, M. Caresana, I. Clairand, E. Fantuzzi, P. Fattibene, M.A. Lopez, P. Olko, W. Rühm, H. Schuhmacher, H. Stadtman, F. Vanhavere



EURADOS Working Groups

Eight EURADOS Working Groups

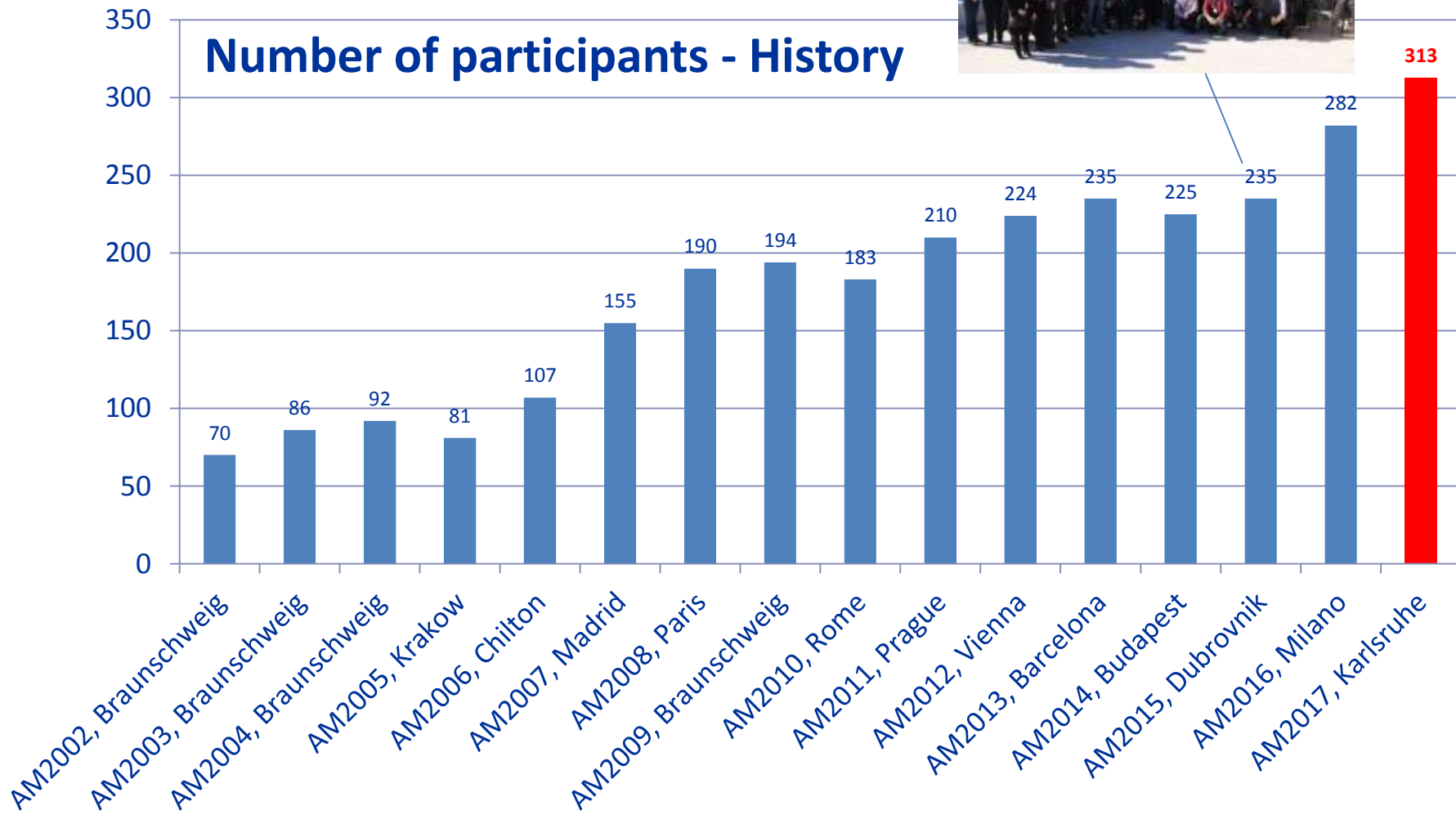
- Harmonization of Individual Monitoring (P. Gilvin, UK)
- Environmental Dosimetry (A. Vargas, Spain)
- Computational Dosimetry (R. Tanner, UK)
- Internal Dosimetry (M.A. Lopez, Spain)
- Radiation Dosimetry in Radiotherapy (R. Harrison, UK)
- Retrospective Dosimetry (C. Woda, Germany)
- High-Energy Radiation Fields (J.F. Bottollier, France)
- Dosimetry in Medical Imaging (Z. Knezevic, Croatia)



Associate Members

Almost 500 scientists contributing to the overall EURADOS mission

EURADOS Annual Meetings



EURADOS Visibility – Website, Newsletter, Reports

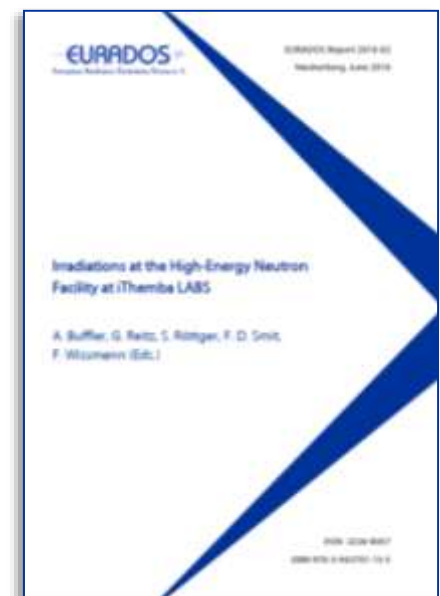
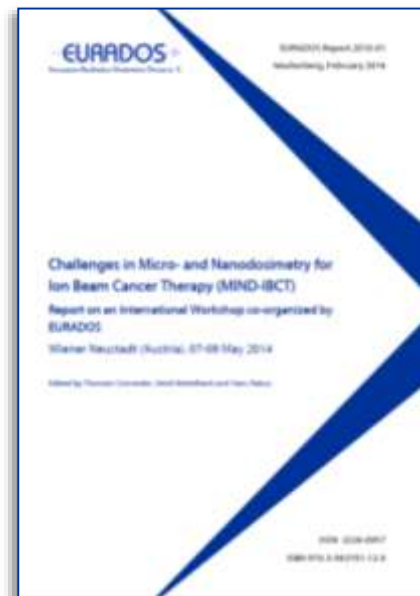
Website and newsletter (S Miljanic, P Fattibene): 920 subscribers

Feel free to subscribe if not yet done!



Two EURADOS Reports in 2016

- [2016-01](#): T. Schneider, H. Nettelbeck, H. Rabus (Eds.) "Challenges in Micro- and Nanodosimetry for Ion Beam Cancer Therapy (MIND-IBCT)" Report on an International Workshop co-organised by EURADOS, Wiener Neustadt, 2014.
- [2016-02](#): A. Buffler, G. Reitz, S. Röttger, F. D. Smit, F. Wissmann (Eds.) "Irradiations at the High-Energy Neutron Facility at iThemba LABS"



EURADOS Peer-Reviewed Publications



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Documents & Publications

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List of publications

In peer reviewed journals published started from the year 2005 related to the work performed in EURADOS working groups,

February 2017
2017

- > Farah, J., De Saint-Hubert, M., Mojzeszek, N., Chiriotti, S., Gryzinski, M., Ploc, O., Trompier, F., Turek, K., Vanhavere, F., Olko, P., **2017**. Performance tests and comparison of microdosimetric measurements with four tissue-equivalent proportional counters in scanning proton therapy. *Radiat. Meas.* 96, 42-52 (**WG9**)

2016

- > Breustedt, B., Broggio, D., Gomez-Ros, J. M., Leone, D., Marzocchi, O., Poelz, S., Shutt, A., Lopez, M. A., **2016**. The EURADOS-kit training course on Monte Carlo methods for the calibration of body counters. *Radiat. Prot. Dosim.* 170, 446-450 (**WG7**)
- > [Castellani](#), C. M., [Marsh](#), J. W., [Hurtgen](#), C., [Blanchardon](#), E., [Bérard](#), P., [Giussani](#), A., Lopez, M. A. **2016**. [IDEAS Guidelines \(Version 2\) for the estimation of Committed Doses from incorporation monitoring data](#). *Radiat. Prot. Dosim.* 170, 17-20 (**WG7**)
- > Chevallier, M.-A., Fantuzzi, E., Cruz-Suarez, R., Luszik-Bhadra, M., Mayer, S., Thomas, D. J., Tanner, R., Vanhavere, F., **2016**. EURADOS IC2012n: Further Information Derived from a EURADOS International Comparison of Neutron Personal Dosimeters. *Radiat. Prot. Dosim.* 170, 78-81(**WG2**)
- > Ciraj-Bjelac, O., Carinou, E., Ferrari, P., Ginjaume, M., Sans Merce, M., O'Connor, U., **2016**. Occupational exposure of the eye lens in interventional procedures: How to assess and manage radiation dose. *J Am Coll Radiol.* 13, 1347-1353 (**WG12**)
- > Clairand, I., Ginjaume, M., Vanhavere, F., Carinou, E., Daures, J., Denozière, M., Honorio da S. E., Roig, M., Principi, S., Van Ryckeghem, L., **2016**. First EURADOS intercomparison exercise of eye lens dosimeters for medical applications. *Radiat. Prot. Dosim.* 170, 21-26 (**WG12**)
- > Ferrari, P., Becker, F., Carinou, E., Chumak, V., Farah, J., Jovanović, Z., Krstić, D., Morgun, A., Principi, S., Teles, P., **2016**. Monte Carlo study of the scattered radiation field near the eyes of the operator in interventional procedures. *J Radiol Prot.* 36(4), 902-921. (**WG12**)
- > Figel, M., Stadtmann, H., Grimbergen, T. W. M., McWhan, A., Romero, A. M., **2016**. EURADOS Intercomparisons on whole-body dosimeters for photons from 2008 to 2014. *Radiat. Prot. Dosim.* 170, 113-116 (**WG2**).
- > Grimbergen, T., Figel, M., McWhan, A., Romero, A. M., Stadtmann, H., **2016**. EURADOS programme of intercomparisons for individual monitoring services: Seven years of development and future plans. *Radiat. Prot. Dosim.* 170, 90-94 (**WG2**).

Year Number of publications

2016	12
2015	12
2014	15
2013	9
2012	2
2011	11
2010	1
2009	6
2008	15
2007	7



**10 year
average:
every 6 weeks
one publication**

EURADOS Workshops and Winterschools

Winter Schools:

“Refreshment courses”

- Medical Application of Internal Dosimetry (AM2017)
- Dosimetry for Epidemiological Cohorts (AM2016)
- Fukushima (AM2015)
- RBE, radiation weighting factor and quality factor (AM2014)
- Status and Future Perspectives of Computational Micro- and Nanodosimetry (AM2013)
- Radiation Protection for Medical Staff (AM2011)

Workshops with Proceedings ¹⁾

Related to research topics where EURADOS Working Groups are involved

- Dosimetry for second cancer risk estimation in radiotherapy (AM2012)
- Accelerator radiation protection and shielding (AM2010)
- Cosmic Radiation and Aircrew Exposure (AM2009)
- Dosimetric Issues in the Medical Use of Ionizing Radiation (AM2008)
- Characterization of Workplaces for the Assessment of the Doses to Individuals (AM2007)

¹⁾ 2004-2010: in RPD; 2012: in Rad Meas

EURADOS – Organisation of Intercomparison Exercises

- **Intercomparisons regularly organised as needed**

- Whole body, photons
- Finger ring, photons
- Whole body, neutrons
- Active dosimeters
- Passive area dosimeters
- Etc. ...

- **Example: IC2016**

- Whole body dosimeters
- 86 participants, 36 countries,
- 6 non-European participants

- **Results are**

- Evaluated by Eurados
- Discussed during Annual Meetings
- Published in scientific literature
- Published in detail as EURADOS reports

- [2015-01](#): A. F. McWhan et al. EURADOS Intercomparison 2010 for Whole Body Dosimeters in Photon Fields
- [2015-02](#): A. F. McWhan et al. "EURADOS Intercomparison 2012 for Whole Body Dosimeters in Photon Fields"
- [2015-04](#): P. J. Gilvin et al. „Quality Assurance in Individual Monitoring for External Radiation – Results of EURADOS Survey 2012“
- [2014-02](#): E. Fantuzzi et al. "Eurados intercomparison 2012 for Neutron Dosimeters"
- [2013-03](#): T.W.M. Grimbergen et al. "EURADOS Intercomparison 2009 for Extremity Dosimeters in Photon and Beta Fields"
- [2012-03](#): J.-F. Bottollier et al. "Comparison of Codes Assessing Radiation Exposure of Aircraft Crew due to Galactic Cosmic Radiation"



All WGs Involved in Training Activities – Recent Examples



Announcement Individual Monitoring Services Learning Network

During the

EURADOS Annual Meeting 2017

AM2017

Karlsruhe, Tuesday 28th February 2017

Dear colleagues from dosimetric services,

We are pleased to invite you to the IMS (Individual Monitoring Service) Learning Network.

This is a new initiative from EURADOS (WG2), intended to promote the harmonisation of individual monitoring in Europe by:

- Building on the interest generated at the Individual Monitoring Conferences. These happen every 5 years - too long not discussing, learning, improving, sharing all kinds of dosimetric issues.
- Providing follow-up for colleagues who have attended the WG2 Training Courses on the Technical Recommendations document (RP160)(1)
- Providing a development opportunity for IMS staff.

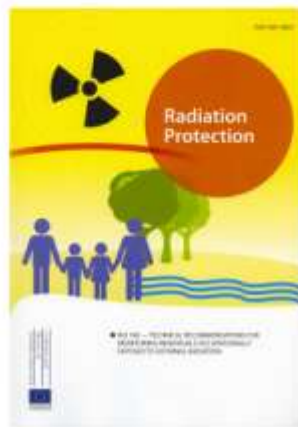
So please join us at the annual meeting at EURADOS for the parallel program on Tuesday. The Learning Network is open to the staff of all individual monitoring services. Please register for the EURADOS Annual Meeting.

What is it about?

During this day we will combine intercomparison participant meeting, external lectures with a practical impact for dosimetry services and intense discussions between peers. The objective is to learn and grow together during this learning network.



European Technical Recommendations
for Monitoring Individuals
Occupationally Exposed to External
Radiation
(Radiation Protection 160)



Second announcement

Uncertainty analysis
for retrospective
dosimetry and
associated research

June 19-23, 2017
IRSN, Paris, France

Organized by

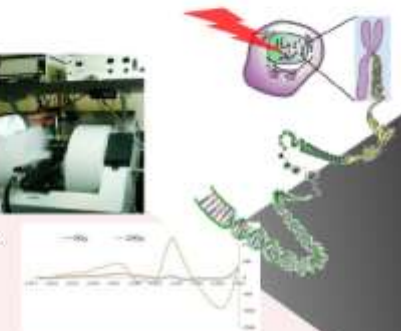


& EURADOS

Sponsored by



IRSN



EURADOS – Strategic Research Agenda ...

EURADOS Stakeholder Workshop – June 30, 2016, Neuherberg, Germany

Meeting of 24 international organisations

- Commenting on EURADOS SRA
- Identifying missing topics
- Expressing interest (or not) in future cooperations

Participating organisations

ALLIANCE, EANM, EFOMP, ENISS, ESR, ESTRO, EURAMET, HERCA, IAEA, IARC, ICRP, ICRU, ILO, IRPA, ISO, ISSDO, MELODI, NEA, NERIS, NUGENIA, PTCOG, RENEB, SSH.

Next Steps

- Workshop report published
- Update of current EURADOS SRA



EURADOS – Future Activities ...

- Various intercomparison exercises planned (photons, neutrons)
- Various training actions planned
- Interaction with other players in radiation protection (ICRP, ICRU, EANM, ...)
- Stakeholder involvement
- CONCERT involvement
- Development of Research Agenda, Roadmap
- Interaction with MELODI, ALLIANCE, NERIS, EURAMED

... Details see AM2018 ...



First announcement

EURADOS Annual Meeting 2018
AM2018

Lisbon, 5th to 8th February 2018



Including:

- > Winter School "Application of physical and computational phantoms in dose assessment"
- > Meetings of EURADOS Working Groups
- > EURADOS General Assembly and Council Meeting



THANK YOU!