Publications from the EMRAS I Programme

Gerhard Pröhl

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Topics in EMRAS I

- Revision of the IAEA Handbook on transfer in terrestrial and aquatic environments (TRS-364)
- Environmental transfer of ^{3}H and ^{14}C
- Environmental transfer of ^{131}I (use of Chernobyl data)
- Radionuclide transfer in aquatic systems
- Behaviour of radionuclides in urban environments
- Estimating the exposure of non-human biota
- Behaviour of NORM in the environment

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IAEA Publications

- Technical Report Series
  - Handbook of Parameter Values for the Prediction of Radionuclide Transfer in Terrestrial and Freshwater Environments, IAEA-TRS-472 (published 2010)
- Published TECDOCS
  - Quantification of Radionuclide Transfer in Terrestrial and Freshwater Environments for Radiological Assessments, IAEA-TECDOC-1616, 618 p.
- 6 TECDOCS to be published
  - Modelling the Environmental Transfer of Tritium and ^{14}C to Biota and Man
  - Testing of Models for Predicting the Behaviour of Radionuclides in Freshwater Systems and Coastal Areas
  - Modelling Radiation Exposure and Radionuclide Transfer to Non-Human Species
  - Modelling the Transfer of Radionuclides from Naturally Occurring Radioactive Material (NORM)
  - Environmental Modelling of Remediation of Urban Contaminated Areas
  - Validation of ^{131}I ecological transfer models and thyroid dose assessments using Chernobyl fallout data

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Publications in scientific journals

Urban Modelling

Thiessen, K.M., Batandjieva, B., Andersson, K.G., Arkhipov, A., Charnock, T.W., Gallay, F., Gaschak, S., Golikov, V., Hwang, W.T., Kaiser, J.C., Kamboj, S., Steiner, M., Tomás, J., Trifunovic, D., Yu, C., Zelmer, R., and Zlobenko, B.

Improvement of modelling capabilities for assessing urban contamination: The EMRAS Urban Remediation Working Group.
Applied Radiation and Isotopes 66:1741–1744 (2008).

Thiessen, K.M., Arkhipov, A., Batandjieva, B., Charnock, T.W., Gaschak, S., Golikov, V., Hwang, W.T., Tomás, J., and Zlobenko, B.

Modelling of a large-scale urban contamination situation and remediation alternatives.
Journal of Environmental Radioactivity 100:413–421 (2009).

Thiessen, K.M., Andersson, K.G., Batandjieva, B., Cheng, J.-J., Hwang, W.T., Kaiser, J.C., Kamboj, S., Steiner, M., Tomás, J., Trifunovic, D., and Yu, C.

Modelling the long-term consequences of a hypothetical dispersal of radioactivity in an urban area including remediation alternatives.
Journal of Environmental Radioactivity 100:445–455 (2009).

Thiessen, K.M., Andersson, K.G., Charnock, T.W., and Gallay, F.

Modelling remediation options for urban contamination situations.
Journal of Environmental Radioactivity 100:564–573 (2009).

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Publications in scientific journals

Environmental Transfer of ^{131}I

M. Bartusková, I. Malátová, V. Berkovskyy, P. Krajewski, M. Ammann, V. Filistovic, T. Homma, J. Horyna, B. Kanyár, T. Nedveckaite, O. Vlasov and I. Zvonova

Radioecological assessments of the Iodine working group of IAEA's EMRAS programme: Presentation of input data and analysis of results of the Prague scenario

Radioprotection, Vol. 44, No. 5, 295–299 (2009).

I. Zvonova, P. Krajewski, V. Berkovsky, M. Ammann, C. Duffa, V. Filistovic, T. Homma, B. Kanyar, T. Nedveckaite, S.L. Simon, O. Vlasov, D. Webbe-Wood

Validation of ^{131}I ecological transfer models and thyroid dose assessments using Chernobyl fallout data from the Plavsk district, Russia

J. Envronm. Radioactivity, January 2010

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Revision of TRS

- Special Issue of Journal Environmental Radioactivity
  - Volume 100, Issue 9, September 2009
  - 20 papers to specific environmental transfer process
- Largest EMRAS I working group
- Includes input from other working groups

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Protection of the Environment

- 7 papers dealing with
  - Dosimetry
  - Transfer of radionuclides to biota in terrestrial and aquatic ecosystems
  - Model comparison
  - Model performance

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Protection of the Environment

Vives i Batlle, J., Balonov, M., Beaugelin-Seiller, K., Beresford, N.A., Brown, J., Cheng, J-J., Copplestone, D., Doi, M., Filistovic, V., Golikov, V., Horyna, J., Hosseini, A., Howard, B.J., Jones, S.R, Kamboj, S., Kryshev, A., Nedveckaite, T., Olyslaegers, G., Pröhl, G., Sazykina, T., Ulanovsky, A., Vives Lynch, S., Yankovich, T. and Yu, C. 2007.
Inter-comparison of unweighted absorbed dose rates for non-human biota.
Radiat. Environ. Biophysics, 46, 349-373.

Beresford, N.A., Balonov, M., Beaugelin-Seiller, K., Brown, J., Copplestone, D., Hingston, J.L., Horyna, J., Hosseini, A., Howard, B.J., Kamboj, S., Nedveckaite, T., Olyslaegers, G., Sazykina, T., Vives i Batlle, J., Yankovich, T.L., Yu. C. 2008.
An international comparison of models and approaches for the estimation of the radiological exposure of non-human biota.
Applied Radiation and Isotopes, 66, 1745-1749.

Beresford, N.A., Barnett, C.L., Brown, J., Cheng, J-J. Copplestone, D., Filistovic, V., Hosseini, A., Howard, B.J., Jones, S.R., Kamboj, S., Kryshev, A., Nedveckaite, T., Olyslaegers, G., Saxén, R., Sazykina, T., Vives i Batlle, J., Vives-Lynch, S., Yankovich, T. and Yu, C. 2008.
Inter-comparison of models to estimate radionuclide activity concentrations in non-human biota.
Radiat. Environ. Biophys., 47, 491-514.

Beresford, N.A., Barnett, C.L., Beaugelin-Seiller, K., Brown, J.E., Cheng, J-J., Copplestone, D., Gaschak, S., Hingston, J.L., Horyna, J., Hosseini, A., Howard, B.J., Kamboj, S., Kryshev, A., Nedveckaite, T., Olyslaegers, G., Sazykina, T., Smith, J.T., Telleria, D., Vives i Batlle, J., Yankovich, T.L., Heling, R., Wood, M.D., Yu, C. 2009.
Findings and recommendations from an international comparison of models and approaches for the estimation of radiological exposure to non-human biota.,
Radioprotection, 44, 5, 565-570.

Beresford, N.A., Barnett, C.L., Brown, J.E., Cheng, J-J., Copplestone, D., Gaschak, S., Hosseini, A., Howard, B.J., Kamboj, S., Nedveckaite, T., Olyslaegers, G., Smith, J.T., Vives I Batlle, J., Vives-Lynch, S., Yu, C. in-press
Predicting the radiation exposure of terrestrial wildlife in the Chernobyl exclusion zone: an international comparison of approaches.
J. Radiological Prot.

Yankovich, T.L., Vives I Batlle, J., Vives-Lynch, S., Beresford, N.A., Barnett, C.L., Brown, J.E., Cheng, J.-J., Copplestone, D., Heiling, R., Hosseini, A., Howard, B.J., Kryshev, A.I., Nedveckaite, T., Smith, J.T. and Wood, M. (submitted). International model validation exercise on radionuclide transfer and doses to freshwater biota. Radiation and Environmental Biophysics

Beaugelin-Seiller, K., Brown, J.E., Cheng, J-J., Copplestone, D., Heling, R., Hosseini, A., Howard, B.J., Kryshev, A.I., Nedveckaite, T., Smith, J.T., Wood, M.D.
International model validation exercise on radionuclide transfer and doses to freshwater biota, Submitted J. Radiological Prot.

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Conclusions

- Numerous publications contribute to the success of EMRAS
- Intensive publication in peer reviewed journals underlines the high quality of the work of EMRAS
- Success provided by the consequent integration of the publication in the plans of the working groups

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