



HelmholtzZentrum münchen
German Research Center for Environmental Health

DPG/ENTRIA Physics School on
Radiation exposure
and disposal options for nuclear
waste

05 – 16 August 2016
at the Physikzentrum Bad Honnef (Germany)

Friday, 5. August 2016

17:00 – 21:00 Arrival and registration at Physikzentrum Bad Honnef

Saturday, 6. August 2016 - Introduction and Basics

9:00	Welcome, Organisation	Prof. C.Walther
9:10	Basics in Nuclear Physics and Radioactivity	Prof. W. Rühm
10:30	Coffee Break	
11:00	Dose quantities and concepts	Prof. W. Rühm
11:45		
12:30	Lunch Break	
14:00	Natural Sources of Ionizing Radiation	Prof. C.Walther
14:45		Prof. W. Rühm
15:30	Coffee Break	
16:00	Chemistry of long-lived radionuclides relevant for waste disposal	Prof. C.Walther
16:45		
17:30	End of lectures	
18:00	Dinner and Social Evening	

Sunday, 7. August 2016 - Introduction and Basics

9:00	Effects of Ionising Radiation in Matter – Neutrons	Prof. C.Walther
9:45	Radionuclide production in fission and fusion	Prof. W. Rühm
10:30	Coffee Break	
11:00	Basics in Radiation Biology	Prof. A. Wojcik
11:45		
12:30	Lunch Break	
14:00	Occupational Exposures	Dr. G. Frasch
14:45		
15:30	Coffee Break	
16:00	Fusion and Disposal	Dr. K. Szewczak
16:45		
17:30	Dinner	
18:45		
19:00	General concept of ITER	Dr. C. S. Pitcher
19:45		
21:00	End of Lectures	

Monday, 8. August 2016 – Experiments

9:00	Practical Radiation Measurements in Small Parallel Groups	Prof. C.Walther
10:30	Coffee Break	
11:00	Practical Radiation Measurements in Small Parallel Groups	Prof. C.Walther
11:45		
12:30	Lunch Break	
	Free afternoon	
18:00	Dinner	

Tuesday, 9. August 2016 – Medical Radioisotopes, Release and Disposal

9:00	Production of radioisotopes in reactors and accelerators	H. Gerstenberg
9:45		
10:30	Coffee Break	
11:00	Radionuclides in diagnostics and therapy	Prof. F.Roesch
11:45		
12:30	Lunch Break	
14:00	Doses to staff in nuclear medicine / biokinetics after incorporation	M. Froning
14:45		
15:30	Coffee Break	
16:00	Releases to the environment	Dr. H. Fischer
16:45		
17:30	End of Lectures	
18:00	Dinner	

Wednesday, 10. August 2016 – Concepts for waste disposals

9:00	Typical options for waste disposal	Dr. D. T. Reed
9:45		
10:30	Coffee Break	
11:00	Scenario analysis	Prof. K. Röhlig
11:45		
12:30	Lunch Break	
14:00	Partitioning	Prof. G. Modolo
14:45		
15:30	Coffee Break	
16:00	Transmutation	Dr. W. Tromm
16:45		
17:30	End of Lectures	
18:00	Dinner	

Thursday, 11. August 2015 – Geological and Biospherical Models

9:00	Repositories for heat-generating waste in deep geological formations	Prof. K.-H. Lux
9:45	– influence on underground fluiddynamic processes	
10:30	Coffee Break	
11:00	Climate, vegetation, land use	Dr. J. Valentin
11:45		
12:30	Lunch Break	
14:00	Boreholes and other exotic options	Prof. H. Geckeis
14:45		
15:30	Coffee Break	
16:00	Epidemiology at natural dose levels	To be confirmed
16:45		
17:30	End of Lectures	
18:00	Dinner	
19:30	Panel discussion: Exposure scenarios for various concepts of waste disposal	

Friday, 12. August 2016 – Low Dose Risks

09:00	Risks of low doses – human data	Dr. S. L. Simon
09:45		
10:30	Coffee Break	
11:00	Biological Effects of low doses	Prof. M. Atkinson
11:45		
12:30	Lunch Break	
14:00	Transfer factors (uncertainties, future climate)	Prof. B. J. Howard
14:45		
15:30	Coffee Break	
16:00	Animal experiments	Prof. G. Woloschak
16:45		
17:30	End of Lectures	
18:00	Dinner	
19:30	Panel discussion: 10 µSv concept	

Saturday, 13. August 2016

Full day excursion

Sunday, 14. August 2016 – Risk Aspects

11:00	Risks of daily life	Prof. H. Bender
11:45		
12:30	Lunch Break	
14:00	Ethical perspectives and aspects of participation in the context of nuclear waste disposal	Prof. C. F. Gethmann
14:45		
15:30	Coffee Break	
16:00	Context of risk and emergency management	Prof. R. Michel
16:45		
17:30	End of Lectures	
18:00	Dinner	
19:30	Panel discussion: Current political developments	

Monday, 15. August 2016 - Miscellaneous

09:00	Legal development in reference to EU basic specification	F. Semper
09:45		
10:30	Coffee Break	
11:00	Waste management and disposal in Fukushima	Prof. T. Sasaki
11:45		
12:30	Lunch Break	
14:00	Comparison of Disposal in Fukushima and Chernobyl	Dr. A. Konoplev
14:45		
15:30	Coffee Break	
16:00	Interim storage and transport of high level waste	TÜV Nord
16:45		
17:30	End of Lectures	
18:00	Dinner and Social Evening	

Tuesday, 16. August 2016 – Panel Discussion

9:00	Participation/Stakeholder Involvement in the Context of Nuclear Waste	A. Bergmans
9:45		
10:30	Coffee Break	
11:00	Panel Discussion: Partizipation	
11:45		
12:30	Lunch Break	
14:00	Departure	