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Joint ICTP-IAEA Workshop on Modelling for Encapsulated Intermediate Level Waste (ILW) and High Level Waste (HLW) During Long-Term Storage | (smr 3920)

Wednesday 28 February 2024

Radiation modelling using ORIGEN AND ORIGAMI codes - Budinich Lecture Hall / LBLab (LB) (09:00-17:00)

time	title	presenter
09:00	Interactions of Ionising Radiation interactions with cement waste form or concrete container	JOHN PROVIS
09:30	Introduction to radiation transport and shielding of ionising radiation	JOHANN VAN ROOYEN
09:50	Overview of the ORIGEN and ORIGAMI codes in SCALE-6.2 and 6.3	JOHANN VAN ROOYEN
10:40	Coffee break	
10:55	Demonstration of the calculation of (Nuclide,Activity) ($N_i;A_i(t)$) inventories in radioactive waste, using the codes ORIGEN, ORIGAMI and FISPACT-II. Translating ($N_i;A_i(t)$) inventories to radiation emission source terms using ORIGEN and MCNP-SOURCE-APP	JOHANN VAN ROOYEN
12:45	Lunch & Poster session	
13:50	Demonstration of the modelling of chemical processing that feeds the production of radioactive waste, using the codes ORIGEN and FISPACT-II. Case studies: (1) Solid residue from irradiated target-plates for (n,f) (^{99}Mo) production; (2) LILW-SL liquid radioactive waste produced in the production of (n,f) (^{99}Mo).	JOHANN VAN ROOYEN
15:00	Coffee break	
15:25	From the "Age of Equations" to the "Age of Simulations". Introduction to the radiation transport code MCNP6.2 and the development of calculation models for simulations. Conceptual mapping of the terms in the Boltzmann transport equation to an MCNP calculation model.	JOHANN VAN ROOYEN
16:30	Enhanced radiation resistance of nano-crystalline zirconolite	MERRY GUPTA