



Agenda Beacon Final Workshop

This is also the 5th and last Annual Meeting and General Assembly Meeting of the Beacon project

Date, time: **17 May** 13.00 - **19 May** 15.00

Place: **Imperial College London**, Skempton Building - Department of Civil and Environmental Engineering, Lecture theatre 201, Imperial College Road, South Kensington, London

Beacon partners have nametags that are marked with post-its.

Pink for WPs 3 & 5 Model development and testing

Green for WP4 Experimental

Yellow for WP1 Assessment cases, WP2 Collection of existing data/models and WP6 Civil society

Orange for management and coordination

If you have Beacon related questions, don't hesitate to ask anyone of the involved. They will be able to answer or point towards someone who can.

Tuesday	17 May	Chair
13.00 -13.10	Welcome to Beacon final workshop, 5 th Annual Meeting and General Assembly (Beacon Executive Board , Olivier Leupin, Nagra,)	
13.10 -13.20	Welcome to Imperial College London (Lidija Zdravkovic , ICL)	
13.20 -13.30	Seifallah Ben Hadj Hassine , EC (online)	
13.30 -13.50	Beacon general introduction and background (Patrik Sellin , SKB)	
13.50 -14.35	Geomechanical coupled models involving unsaturated clays (Invited speaker Sebastià Olivella , UPC)	PS
14.35 -15.05	Break	
15.05 -15.25	WP1 Definition and application of assessment case (Olivier Leupin , Nagra)	
15.25 -15.55	WP4 Laboratory testing (Klaus Wiczorek , GRS)	
15.55 -16.25	WP3 Model development (Antonio Gens , UPC)	
16.25 -16.55	WP5 Testing, verification and validation of models (Jean Talandier , Andra)	
	Questions	PS
17.00 -17.20	Poster introduction - 3 slides each: 1 for title and two describing, white background, 2 min/ poster <ul style="list-style-type: none"> - Hydro-mechanical properties of compacted bentonites GMZ and MX80 (Chun-Liang Zhang/Klaus Wiczorek, GRS/BRIUG) - Estimation of the buffer homogenisation in the prototype repository (Mattias Åkesson, SKB) - Implementation of an advanced constitutive model for bentonite using MFront for safety and performance assessments of HLW-repositories in the numerical code OpenGeoSys (Eric Simo, BGE Technology) - Description of the hysteresis based material model (Ola Kristensson, Clay) - Modeling of initially heterogen systems using the hysteresis based material model (Alex Spets, Clay) - Hypoplastic modelling of bentonite homogenisation (David Mašin, CU) - Numerical modelling of an inhomogeneous bentonite barrier for radioactive waste disposal applications (Giuseppe Pedrone (Lidija Zdravkovic), ICL) - Downscaled tests for studying the influence of the temperature in the homogenization process (Xavier Pintado, Mitta Engineering) 	
17.20 -	Poster session. Snacks/finger food served.	
17.30 -	A 6 min animation that puts the bentonite into a context of a final repository will be shown on the screen in the lecture hall. Can be shown again on request.	MW



Wednesday	18 May	Chair
09.00-09.05	Welcome back	SN
09.05-09.25	WP2 Collection and compilation of existing data and available models (Simon Norris , RWM/NWS)	
09.25-09.45	WP6 Dissemination to civil society (Johan Swahn MKG)	
	Questions	
09.55-10.40	Experimental insights into pellet-based and granular bentonite buffer materials (Invited speaker Enrique Romero-Morales , UPC)	JT
10.50-11.20	Break	
	Plenary presentations (15 min per person/team + 5 for questions and change of speaker)	
11.20 - 11.40	Microstructural evolution of binary barriers during saturation (Maria Victoria Villar , Ciemat)	JCM
11.40 - 12.00	Bentonite homogenization and microstructure evolution modelled using a double structure constitutive law (Antonio Gens , UPC)	JCM
12.00 - 12.20	How does wall friction drive bentonite heterogeneity? (Robert Charlier , ULiege)	JCM
12.20 -13.20	Lunch served, hosted by the project	
13.20 -13.40	Swelling into a void as function of sample/void ratio, temperature and salinity (Caroline Graham , BGS)	SM
13.40 -14.00	Microstructure evolution in pellet based bentonite hydration: focus on pore size distribution characteristics (Liliana Gramigna , ULiege)	SM
14.00 -14.20	Prediction of bentonite behaviour using hydro-mechanical model developed in COMSOL Multiphysics (Darius Justinavicius , LEI)	SM
14.20 -14.40	Simultaneous determination of deformation and liquid content in swelling clay using X-ray radiography (Joni Tantt , JYU)	SM
14.40-14.50	Future Beacon related work (Jiri Svoboda , CTU)	
14.50 - 15.20	Break	
	Presentations of work performed outside Beacon	
15.20 - 15.40	Large-scale testing of a Sandwich shaft seal (Klaus Wieczorek , GRS)	SN
15.40 - 16.00	Long-term aspects of bentonite self-healing and self-sealing via the IBL-project (Heini Reijonen , GTK)	SN
16.00- 16.20	Hydration survey of a large scale sealing experiment (Bure, France) (Matías Alonso , Andra)	SN
16.20 - 16.40	Study of coupled gas migration phenomena through clay barrier systems intended for the isolation of high-level nuclear waste (Marcelo Sánchez , Texas A&M University)	IH
16.40 - 17.00	Hydro-chemo-mechanical modelling of bentonite sealing components (Marcelo Laviña , Amphos21)	IH
18.00	Dinner hosted by the project	



Thursday	19 May	Chair
09.00-09.05	Welcome back	KW
09.05 – 09.25	Analysis of the mechanical behaviour of a heterogeneous bentonite backfill upon non-isothermal saturation (Jose A. Bosch , EPFL)	KW
09.25 – 09.45	Applications of a thermo-hydro-mechanical internal limit model to bentonite experiments (Rebecca Newson , Quintessa)	KW
09.45 – 10.05	Double porosity model for bentonite in thermo-hydro-mechanical processes (Steffen Beese and Vinay Kumar , BGR)	IH
10.05 – 10.25	Investigation of BCV bentonite (Jiri Svoboda , CTU/CU)	IH
10.25-10.55	<i>Break</i>	
10.55-11.15	Modelling of the SKB assessment case using the HBM model (Daniel Malmberg , Clay Tech)	OL
11.15-11.35	Sensitivity analysis of bentonite block-pellet tunnel backfill mechanical evolution during saturation (Heidar Gharbieh , DSA ex. VTT)	OL
	Questions	
11.40-12.10	EARB: Input towards submitted deliverables, the workshop contents and the project as a whole	
12.10-13.10	<i>Lunch served, hosted by the project</i>	
13.10-13.25	WP3, summary and conclusions (Antonio Gens , UPC)	
13.25-13.40	WP4, summary and conclusions (Klaus Wiczorek , GRS)	
13.40-13.55	WP5, summary and conclusions (Jean Talandier , Andra)	
13.55-14.25	Summary discussion of WPs 3-5	AG, KW, JT
14.25 – 14.55	Summarizing Beacon. Impact on the treatment of the mechanical evolution of bentonite barriers in future assessments. (Olivier Leupin , Nagra/ Patrik Sellin , SKB)	
14.55 – 15.00	Any remaining decisions for Beacon Annual meeting and General Assembly	MW
15.00	End of workshop, 5 th Annual Meeting and General Assembly	

AG – Antonio Gens
 JCM – Juan Carlos Mayor
 JT – Jean Talandier
 IH – Irena Hanusová
 KW – Klaus Wiczorek
 MW – Mary Westermarck
 OL – Olivier Leupin
 PS – Patrik Sellin
 SM – Susanna Maanoja
 SN – Simon Norris