

Monday 27 June:

Venue: Møntmestergården (The Mintmaster's Mansion), Den Gamle By, Viborgvej 2, 8000 Aarhus
(orange marking on the map at page 9 in this document)

Contact the ticket officer and ask for access to the Digital Soil Mapping Workshop at the Mintmasters Mansion. You are welcome to show up earlier and explore [Den Gamle By](#).

15:00 – 17:00	Registration
17:00 – 19:00	Reception – snacks and speeches

Tuesday 28 June:

Venue: Auditorium F (Building 1534-215), Aarhus University, Ny Munkegade 118, 8000 Aarhus C

08:30	Registration desk open
09:00 – 09:15	Welcome Mogens H. Greve
09:15 – 09:45	Keynote speech: Climate modeling: the role of subsurface information in predicting climate change Jens Hesselbjerg Christensen
Session 1	Soil Spectroscopy (Chair: Yi Peng)
09:45 – 10:00	Optimizing Model Development and Validation Procedures of Partial Least Squares for Spectral Based Prediction of Soil Properties Nimrod Carmon and Eyal Ben Dor
10:00 – 10:15	Memory Based Learning: A New Data Mining Approach to Model and Interpret Clay Diffuse Reflectance Spectra Asa Gholizadeh, Mohammadmehdi Saberioon and Luboš Borůvka
10:15 – 10:30	Utilization of the Internal Soil Standard (ISS) Method to Optimize Exchange of Soil Spectral Libraries Eyal Ben Dor, Gila Notesco, Agustin Pimstein, Cindy Ong, Ian Lau, Veronika Kopackova, Jose Dematte and Danilo Romero
10:30 – 11:00	Coffee break
Session 2	Digital Soil Mapping of SOC (Chair: Alex McBratney)
11:00 – 11:15	USDA CarbonScapes — A National Look at Carbon Landscapes and Meeting Place for the USDA Carbon Inventory and Modeling Community James A. Thompson, Sharon W. Waltman, Kurt Donaldson, Maneesh Sharma, Frank Lafone, Mike Wilson and Skye Wills
11:15 – 11:30	Coupling high resolution data and national baseline estimates for farm scale soil carbon auditing C Hedley, P Roudier, B Malone, B Minansy and AB McBratney
11:30 – 11:45	Global space-time soil carbon assessment José Padarian, Uta Stockman, Budiman Minasny and Alex B. McBratney
11:45 – 12:00	A million dollar challenge to map peatlands in Indonesia Budiman Minasny, Rudiyanto and Budi Indra Seyiawan
12:00 – 13:00	Lunch

Session 3	Digital Soil Mapping of SOC (Chair: Budiman Minasny)
13:00 – 13:15	3D modelling of Scottish soil properties Laura Poggio and Alessandro Gimona
13:15 – 13:30	Mapping Soil Organic Carbon Stocks Using a General 3D Mapping Approach in the Northeast Tibetan Plateau, China Ren-Min Yang and Gan-Lin Zhang
13:30 – 13:45	High resolution digital soil organic carbon mapping in Western Greenland Philipp Gries, Karsten Schmidt, Thorsten Behrens and Thomas Scholten
13:45 – 14:00	Changes of soil organic matter stocks in Bavaria Anna Kühnel, Martin Wiesmeier, Peter Spörlein, Bernd Schilling and Ingrid Kögel-Knabner
14:00 – 14:15	Soil organic carbon mapping at different scales in Madagascar N. Ramifehiarivo, A. Andriamananjara, H. Razafimahatratra, T. Razafimbelo, M. Rabenarivo, A. Rasolohery, N. Ranaivoson, F. Seyler, A. Albrecht, F. Razafindrabe, M. Brossard and H. Razakamanarivo
14:15 – 14:45	Coffee break
Session 4	Digital Soil Mapping (Chair: A-Xing Zhu)
14:45 – 15:00	Predictive mapping of soil properties at high resolution by component wise gradient boosting from legacy data Madlene Nussbaum, Andreas Papritz, Marielle Fraefel, Andri Baltensweiler, Lorenz Walthert, Armin Keller, Urs Grob and Sanne Diek
15:00 – 15:15	Mapping of soil moisture by deep learning based Cellular Automata Xiao-Dong Song, Gan-Lin Zhang, Feng Liu, De-Cheng Li and Yu-Guo Zhao
15:15 – 15:30	Optimization of sampling configuration for digital soil mapping in a historical wine region, Hungary Gábor Szatmári, Péter László, Katalin Takács, György Lukácsy, József Szabó and László Pásztor
15:30-15:45	Identifying soil variability using multi-year remote sensing for site-specific management Yash Dang and Ram Dalal
15:45 – 16:00	An improved fuzzy logic slope-form system for predictive soil mapping of a landscape-scale area with strong relief conditions Bui Le Vinh, Gerhard Clemens and Karl Stahr
16:00 – 16:15	Hierarchical approach of incorporating legacy information into the digital soil mapping process to provide soil property information at a scale where people make decisions Phillip R. Owens, Jenette Ashtekar, Minerva Dorantes, Mayesse DaSilva and Zamir Libohova
16:15– 16:30	Knowledge discovery from samples using the partial dependence of random forest under fuzzy logic Canying Zeng, A-Xing Zhu and Lin Yang
16: 30 – 17:00	Panel discussion

Workshop dinner

Venue: Varna Palæet, Ørneredevej 3, 8000 Aarhus C

19:00	Bus departure at pick-up point Toldbodgade 6, 8000 Aarhus C <i>(See green marking on the map on page 9 in this document)</i>
19:15 – 22:45	Dinner
23:00	Arrival pick-up point

Wednesday 29 June:

Venue: Auditorium F (Building 1534-215), Aarhus University, Ny Munkegade 118, 8000 Aarhus C

08:30 – 09:00	Keynote speech: Flood-risk Screening using detailed and massive terrain data Lars Arge
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Session 5 Digital Soil Mapping of large areas (Chair: A-Xing Zhu)

09:00 – 09:15	Mapping chemical and physical properties of soils at regional scale on the Swiss Plateau by robust external drift kriging from legacy soil data Andreas Papritz, Madlene Nussbaum, Marielle Fraefel, Andri Baltensweiler, Lorenz Walthert, Armin Keller, Urs Grob and Sanne Diek
09:15 – 09:30	The new digital soil map of Sweden –method and applications Piikki K, Söderström M, Stadig H, Sohlenius G and Rodhe, L
09:30 – 09:45	Automated soil mapping based on Machine Learning: towards a soil data revolution T. Hengl
09:45 – 10:00	Using Remote Sensing and Ancillary Data Mapping Heavy Metals in Qatar Soils Yi Peng, Rania Bou Kheir [†] , Kabindra Adhikari, Radostaw Malinowski, Mette B. Greve, Maria Knadel, Basem Shomar and Mogens H. Greve
10:00 – 10:15	Comparison of a soil texture map synthesized from GlobalSoilMap standard layers with a goal specifically compiled product Annamária Laborczi, Gábor Szatmári, Katalin Takács and László Pásztor
10:15 – 10:30	DOSoReMI.hu; results of a project for functional, DSM based renewal of Hungary's national soil spatial data infrastructure László Pásztor, Annamária Laborczi, Katalin Takács, Gábor Szatmári, Gábor Illés, Endre Dobos, Zsófia Bakacsi and József Szabó
10:30 – 11:00	Coffee break

Session 6 Digital Soil Mapping of large areas (Chair: Lubos Burovka)

11:00 – 11:15	Designing soil monitoring schemes for large areas based on digital soil mapping products Alex. B. McBratney, Jaap De Gruijter and Budiman Minasny
11:15 – 11:30	Legacy soil survey data mining for digital soil mapping in Prince Edward Island (PEI) province in Canada Xiaoyuan Geng, Juanxia He, Yefang Jiang and Bert VandenBygaart
11:30 – 11:45	Applications of DSM for erosion modelling with uncertainty propagation Laura Poggio and Alessandro Gimona

11:45 – 12:00	A Systematic Approach to Building a Sustainable Digital Soil Map Minerva Dorantes, Phillip R. Owens, Jenette Ashtekar, Mayesse DaSilva and Zamir Libohova
12:00 – 12:15	Managing water by managing soils: The importance of soil information for the sustainable development of Central America Axel Schmidt, Phillip R. Owens, Zamir Libohova, Jenette Ashtekar and Minerva Dorantes
12:15 – 12:30	GlobalSoilMap developments in France V.L. Mulder, M. Lacoste, A.C. Richer-de-Forges and M.P. and Martin D. Arrouays
12:30 – 13:30	Lunch
13:00 – 13:30	Only for working group members: Working group meeting, election of new chair and vice chair, next workshop
Session 7	Digital Soil Mapping (Chair: G.B.M Heuvelink)
13:30 – 13:45	Predicting soil depth using survival analysis models Quentin Styc and Philippe Lagacherie
13:45 – 14:00	An error budget for digital soil mapping using proximally sensed EM induction and remotely sensed γ-ray spectrometer data Jingyi Huang, Thomas F.A. Bishop and John Triantafilis
14:00 – 14:15	Can citizen science be used to assist Digital Soil Mapping? David G. Rossiter, Liu Jing, Steve Carlisle and A-Xing Zhu
14:15 – 14:30	Adaptation of public digital soil maps for practical use in agriculture Söderström M, Piikki K. and Cordingley J.
14:30 – 14:45	Ensemble of topsoil texture predictions for Region Centre (France) Román Dobarco, M, Lagacherie, P, Ciampalini, R, Arrouays, D and Saby, NPA
14:45 – 15:00	Mapping of skidding track soil compaction and displacement from high resolution LIDAR-based DEM's in broadleaved forest on poorly drained soils Ingeborg Callesen, Stinna Filsø Susgaard, Jesper Riis Christiansen and Lene Fischer
15:00 – 15:15	Scope to map soil management units at the district level from remotely sensed γ-ray spectrometry and proximal sensed EM induction data Y. Z. Jing, J. Huang, R. Banks and J.Triantafilis
15:15 – 15:30	Digital land resource mapping to address information and capacity shortages in developing countries AJ Ringrose-Voase, M Thomas, GJ Grealish, MTF Wong, A Mercado, GP Nilo, MR Glover and TI Dowling
15:30 – 16:00	Coffee break
Session 8	Digital Soil Mapping (Chair: Tom Hengl)
16:00 – 16:15	Combining uncertainties from the feature domain and spatial domain for digital soil mapping: where to sample more? A-Xing Zhu, Yan Li and Zhou Shi

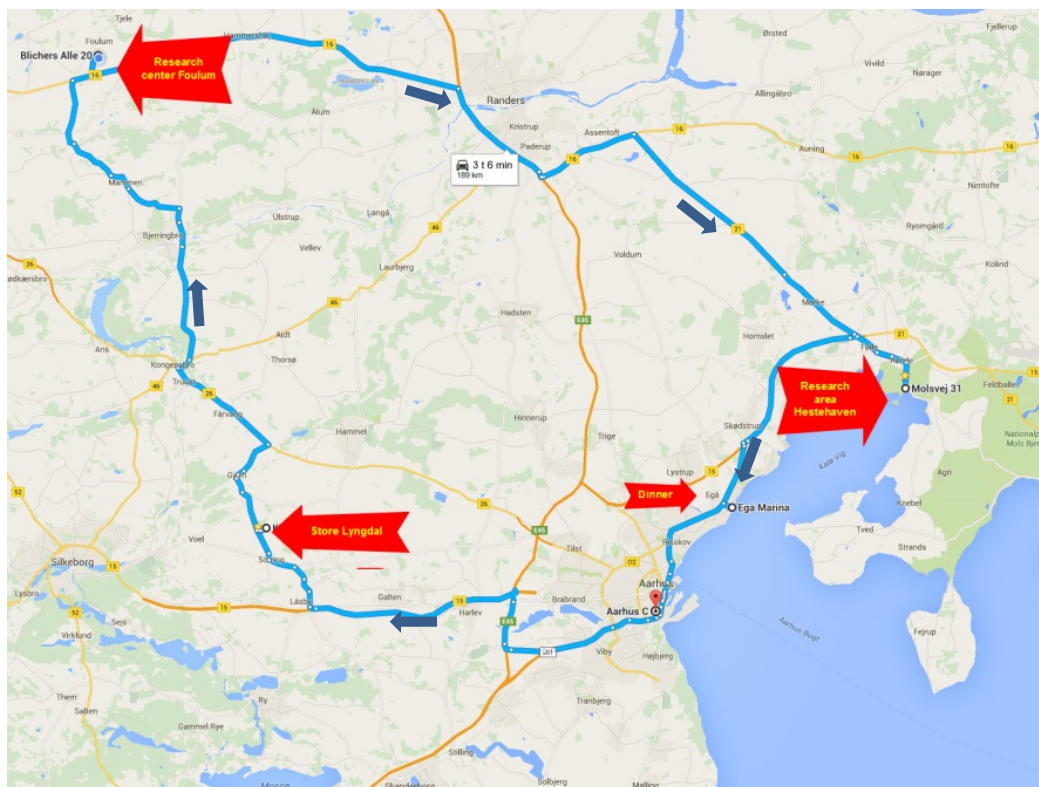
16:15 – 16:30	Digital soil mapping using data with different accuracy levels G.B.M. Heuvelink, T. Hengl, B. Kempen and J.G.B. Leenaars
16:30 – 16:45	Accurate digital mapping of endemic soils Colby Brungard and Budiman Minasny
16:45 – 17:00	Potential to map depth-specific soil organic matter content across an olive grove using quasi-2d and quasi-3d inversion of DUALEM-21 data J. Huang, A. Pedrera-Parrilla, K. Vanderlinden, E.V. Taguas, J.A. Gómez and J.Triantafilis
17:00 – 17:15	Digital Soil Assessment of Landscape-Scale Forest Restoration Using a Species Distribution Model Adrienne C. Nottingham, James A. Thompson and Michael P. Strager
17:15 – 17:30	Mapping sustaining soils in prehispanic Western Mexico. Archaeopedology as a tool for understanding ancient agriculture Antoine Dorison and Christina Siebe
17:30 – 17:45	Mapping of Functional Soil Classes across Scales Jenette M. Ashtekar, Phillip R. Owens, Minerva Dorantes, Mayesse DaSilva and Zamir Libohova
17:45-18:15	Panel discussion

Thursday 30 June:

Whole day excursion:

08:00	Departure from bus pick-up spot: Toldbodgade 6, 8000 Aarhus C (outside TRAIN nightclub), see green marking on the map at page 9 in this document.
09:00 – 10:30	Store Lyngdal Plantage
10:30	Departure
11:30 – 13:45	AU-Foulum, lunch, poster exhibition, demonstration of equipment, guided tour
13:45	Departure
15:00 – 17:30	Hestehaven Kaløvig
17:30	Departure
18:00 - 20:00	Dinner at Egå Marina
20:00	Departure
20:30	Arrival Aarhus

Tour map:



Friday 1 July:

Venue: Auditorium F (Building 1534-215), Aarhus University, Ny Munkegade 118, 8000 Aarhus C

08:30 – 09:15 **Keynote speech: Recent Advances in the Image Spectroscopy for Geo Spatial Information of Soils**
Eyal Ben Dor

Session 9 Remote Sensing and Soil Spectroscopy (Chair: Eyal Ben Dor)

09:15 – 09:30 **Geographically closest resampling strategy for soil organic carbon and clay content prediction**

Yi Peng, Maria Knadel, Mette B. Greve and Mogens H. Greve

09:30 – 09:45 **Identification of soil classes based on vis-NIR reflectance spectra using depth harmonization and machine learning techniques**

Xianli Xie, Decheng Li, Rong Zeng, Xianzhang Pan and Ganlin Zhang

09:45 – 10:00 **How reflectance spectroscopy can assist in soil classification?**

Rong Zeng, Gan-Lin Zhang, Fan Yang, De-Cheng Li and Yu-Guo Zhao

10:00 – 10:15 **Using field spectroscopy in the VNIR-SWIR spectral region for predicting hydrophobicity level of undisturbed soils**

Amihai Granot and Eyal Ben Dor

10:15 – 10:30 **Multi-temporal composites of airborne imaging spectroscopy data for the use in digital soil mapping**

Sanne Diek, Rogier de Jong and Michael Schaepman

10:30– 10:45 **Seasonal Changes of Tilled Soil Surface as Information Factor for Efficient Soil Mapping Using Remote Sensing Data**

I. Savin, E. Prudnikova, N. Vasilyeva and A. Bairamov

10:45 – 11:00 **Mapping of land covers in South Greenland using very high resolution satellite imagery for SOC upscaling**

Menaka Chellasamy, Mateja Ogric, Mogens Humlekrog Greve and René Larsen

11:00 – 11:30 Coffee break

Session 10 Digital Soil Class Mapping (Chair: James A. Thompson)

11:30 – 11:45 **Mapping Drainage Classes in Denmark by Means of Decision Tree Classification**

Anders Bjørn Møller, Bo Vangsø Iversen, Amélie Beucher and Mogens Humlekrog Greve

11:45 – 12:00 **Using regionalization maps in Digital Soil Mapping**

Zhogolev A.V.

12:00 – 12:15 **Multinomial Logistic Regression with soil diagnostic features and land surface parameters for soil mapping of Latium (Central Italy)**

Marchetti Alessandro, Napoli Rosario, Riveccio Rosa and Piccini Chiara

12:15 – 12:30 **Exploring effects of sampling approaches and quantities of training samples on updating conventional soil maps performance**

Xueqi Liu, Axing Zhu and Lin Yang

12:30 – 13:30 Lunch

Session 11	Digital Soil Mapping and Environmental Covariates (Chair: to be confirmed)
13:30 – 13:45	Artificial Neural Networks for soil drainage class mapping in Denmark Amélie Beucher, Anders Bjørn Møller and Mogens Humlekrog Greve
13:45 – 14:00	Development of environmental covariates for mapping soil properties over an alluvial plain Feng Liu, Gan-Lin Zhang, Xiao-Dong Song and Yu-Guo Zhao
14:00 – 14:15	Selection of principal stand factors as predictors for digital mapping of potentially toxic element contents in forest soils Luboš Borůvka, Radim Vašát, Václav Tejnecký, Vít Šrámek, Milan Sářka, Jarmila Čechmánková, Karel Němeček and Vít Penížek
14:15 – 14:30	Acid sulfate soil mapping in Denmark using legacy data and LiDAR-based derivatives Amélie Beucher, Kabindra Adhikari, Henrik Breuning-Madsen, Mette Balslev Greve, Peter Österholm, Sören Fröjdö, Niels Henrik Jensen and Mogens Humlekrog Greve
14:30 – 14:45	Predicting Soil Processes: Digital Soil Mapping as a platform for bridging scale discrepancies between measurements and predictions Zamir Libohova, Phillip R. Owens, Philip Schoneberger, Jenette Ashtekar, Minerva Dorantes, Skye Wills and Hans E. Winzeler
14:45 – 15:15	Coffee break
Session 12	Digital Soil Mapping (Chair: Mogens H. Greve)
15:15 – 15:30	Providing spatial SOC estimates for complex and remote soil-landscapes of scarce data availability and structure Mareike Ließ
15:30 – 15:45	The Role of Digital Soil Mapping in Transforming Agriculture: <i>The Case of Ethiopian Soil Information System (EthioSIS)</i> Tegbaru Bellete
15:45 – 16:00	Classification and mapping of soil pH depth function groups for Denmark Kabindra Adhikari, Budiman Minasny, José Padarian and Mogens H. Greve
16:00 – 16:15	Object-oriented digital soil mapping for the support of Delineation of Areas with Natural Constraints in Hungary Katalin Takács, József Szabó, Zsófia Bakacsi, Tibor Tóth, Gábor Szatmári, Annamária Laborczi and László Pásztor
16:15 – 16:30	A new pH depth function for agricultural soils Asim Biswas and Yakun Zhang
16:30 – 17:00	Panel discussion and closing session

