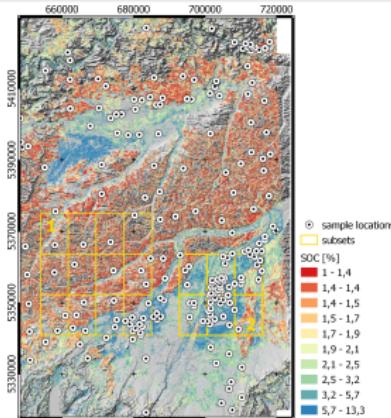


The importance of feature engineering for the explainability of (German) Digital Soil Mapping (DSM) products – a SOC content modelling example in Bavaria

Markus Möller, Simone Zepp, Martin Wiesmeier, Younes Garosi and Uta Heiden

- The acceptance of DSM products in Germany is closely linked to the explainability of prediction results.
- Hand-crafted features like multi-hierarchical terrain attribute variants (TA) and multi-temporal bare soil reflectance composites (SCR) support DSM explainability.



Rank	SUBSET 1		SUBSET 2	
	TA	SCR	TA	SCR
1	TPI31	RED	TPI419	SWIR2
2	TPI48	GREEN	TPI647	GREEN
3	TPI74	NIR	TPI74	RED
4	TPI647	SWIR2	TPI271	NIR
5	TPI419	BLUE	TPI114	BLUE
R^2	0.86		0.62	
RMSE	2.45		2.65	

R^2 – coefficient of determination. TA – terrain attribute, SCR – soil reflectance composite, TPIXXX – TPI moving window size variants

Towards regional feature importance and accuracy metrics!

There are explainable regional differences in both the significance of the predictors and the accuracy that contribute to the communication of DSM results.