

SOILCOVER

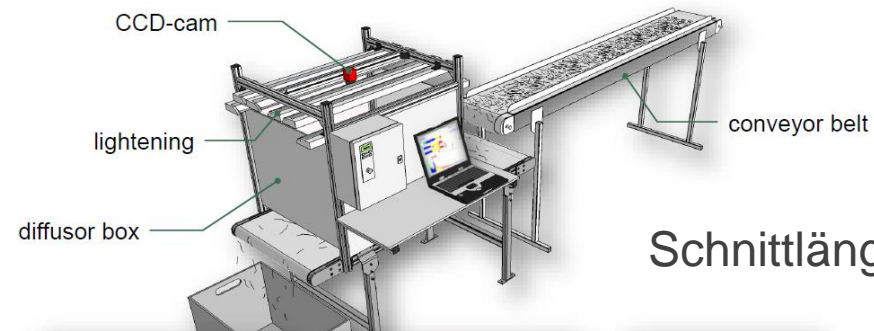
Verfahren zur Bestimmung der Bodenbedeckung

DI Peter Riegler-Nurscher
Josephinum Research Wieselburg
27.09.2016
Wieselburg

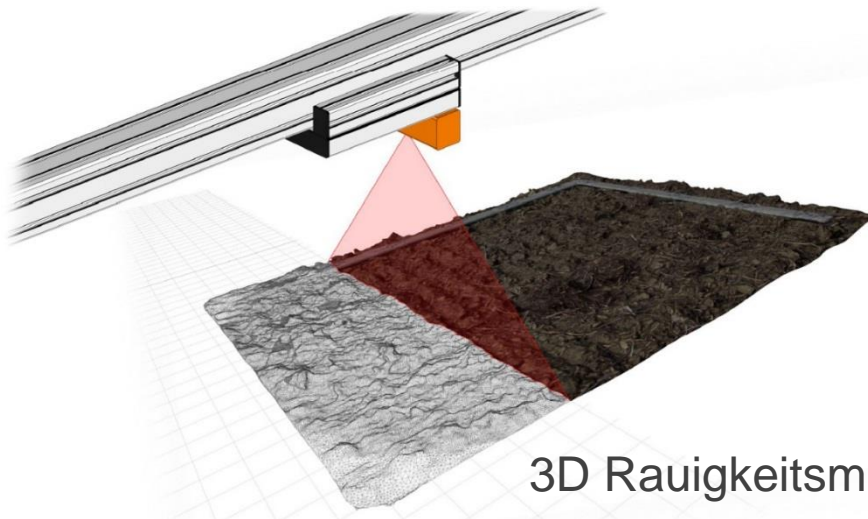




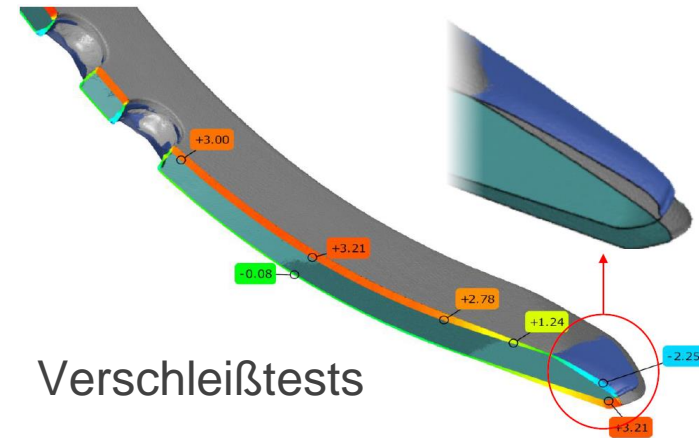
Kraftmessungen



Schnittlängenanalyse



3D Rauigkeitsmessung



Verschleißtests

Verfahren zur Bestimmung der Bodenbedeckung

SOILCOVER

- Automatisierte Ermittlung der Bodenbedeckung
Wozu?

- Schutz vor Bodenerosion



US Department of Agriculture, Public Domain



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- Qualitätsbeurteilung der Bodenbearbeitung



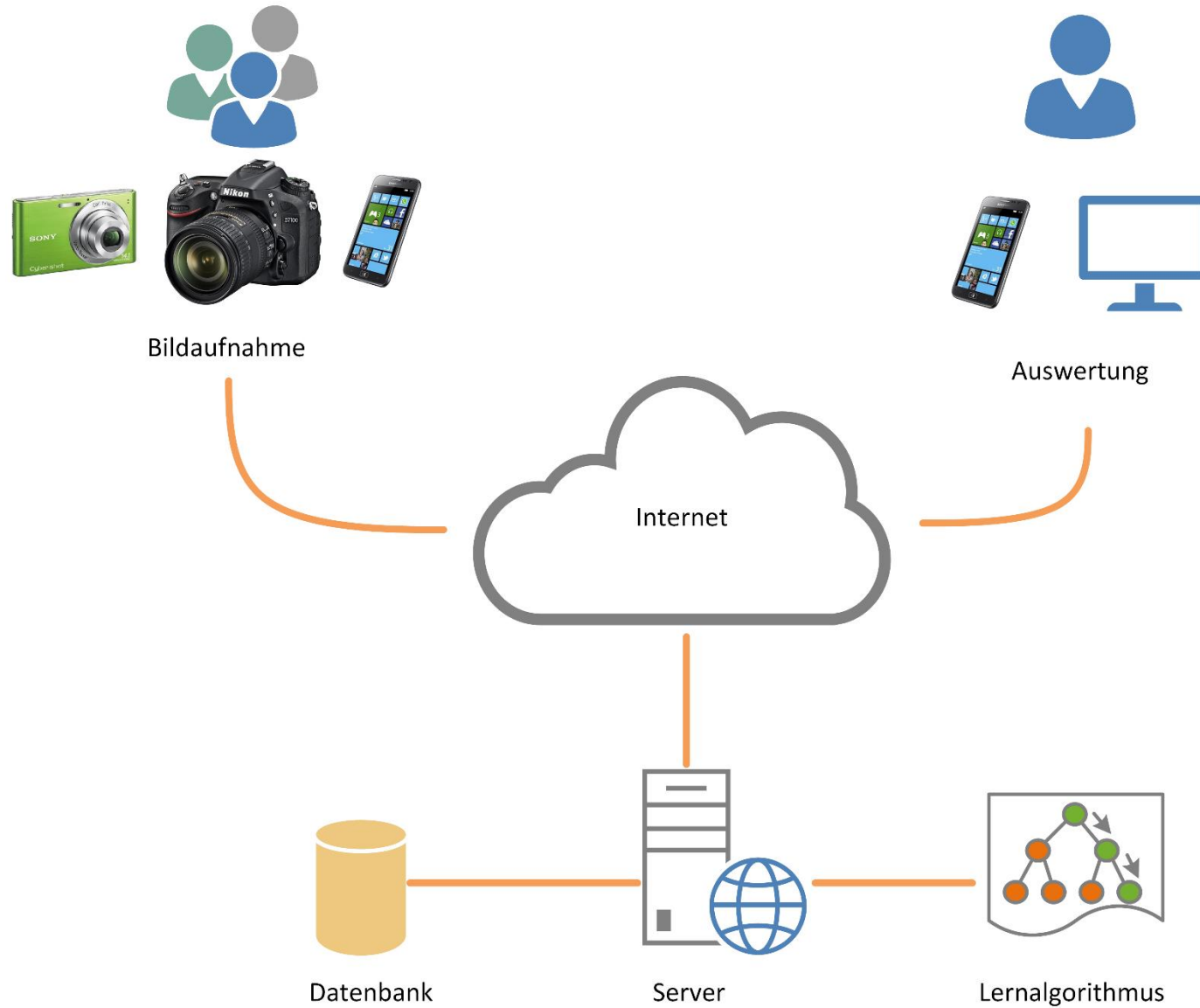
C. Rechberger, Josephinum Research

- Kamerabild der Bodenoberfläche
- Pixelweise 2D Auswertung
 - Lernalgorithmus
 - Client-Server Struktur
- Klassifizierung in Gruppen
 - Lebende organische Masse
 - Tote organische Masse
 - Erde
 - Steine
 - Biofilm

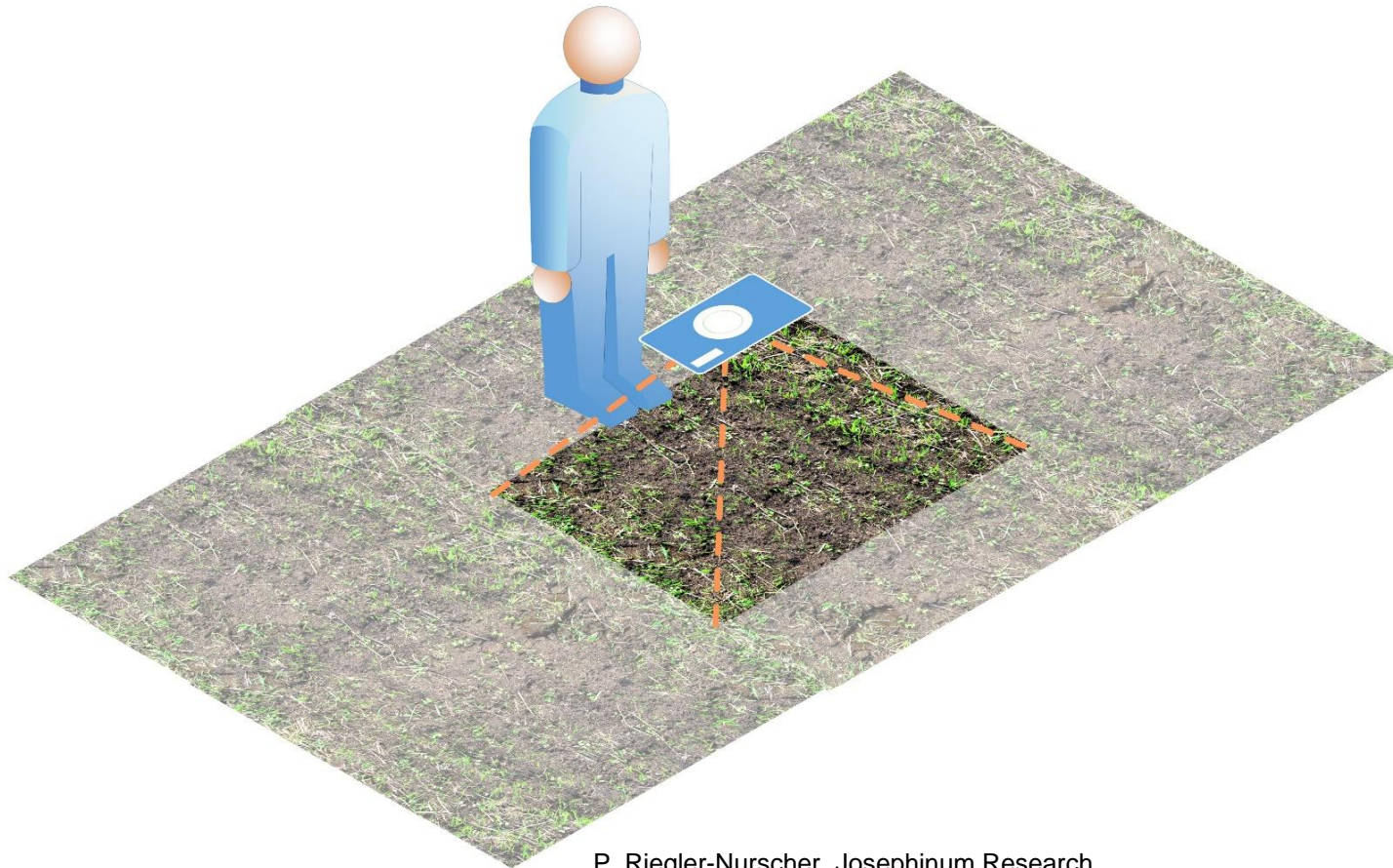


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SERVER - CLIENT STRUKTUR

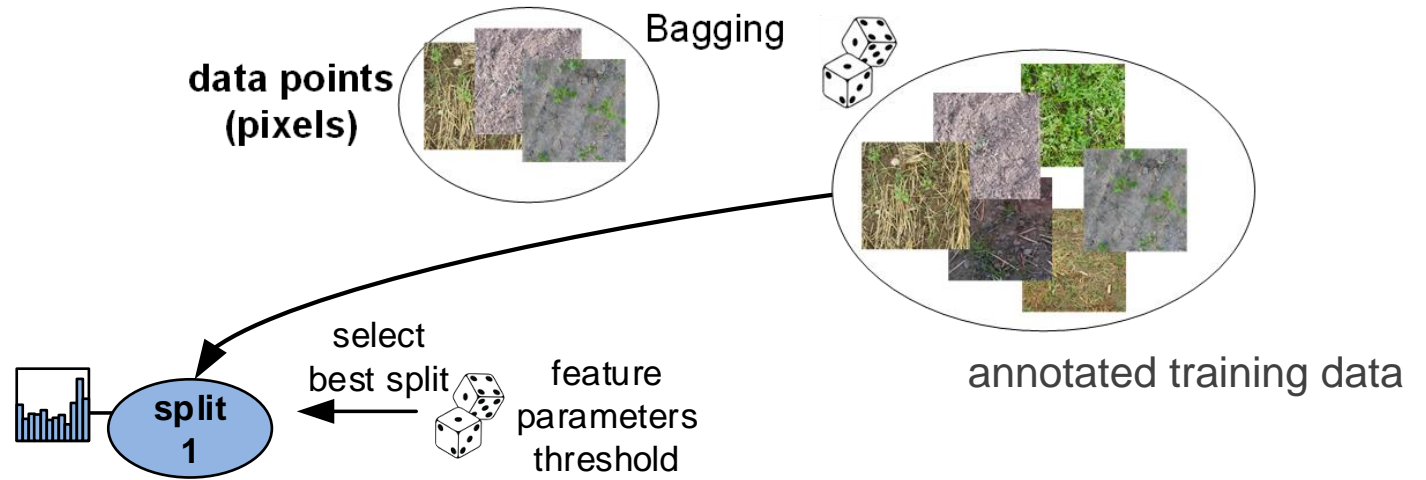


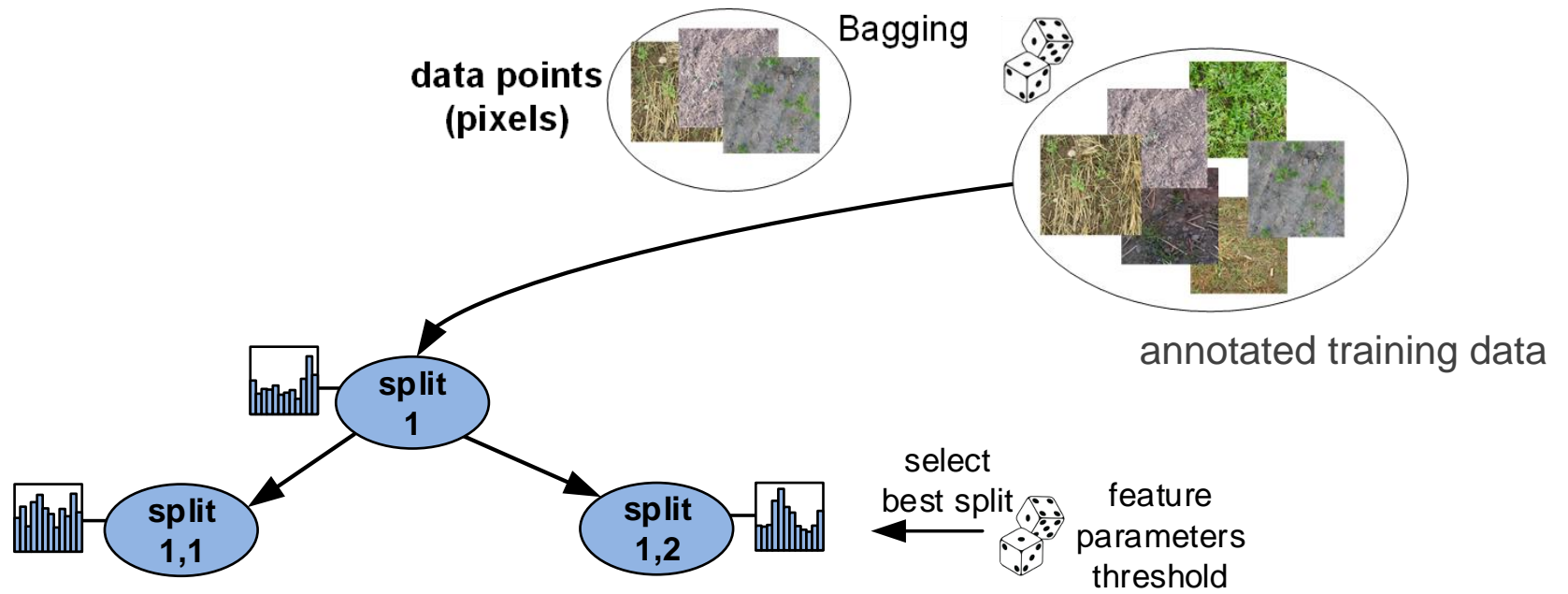
- Ca. 1m über Boden (ca. 1 bis 5 Pixel/mm)

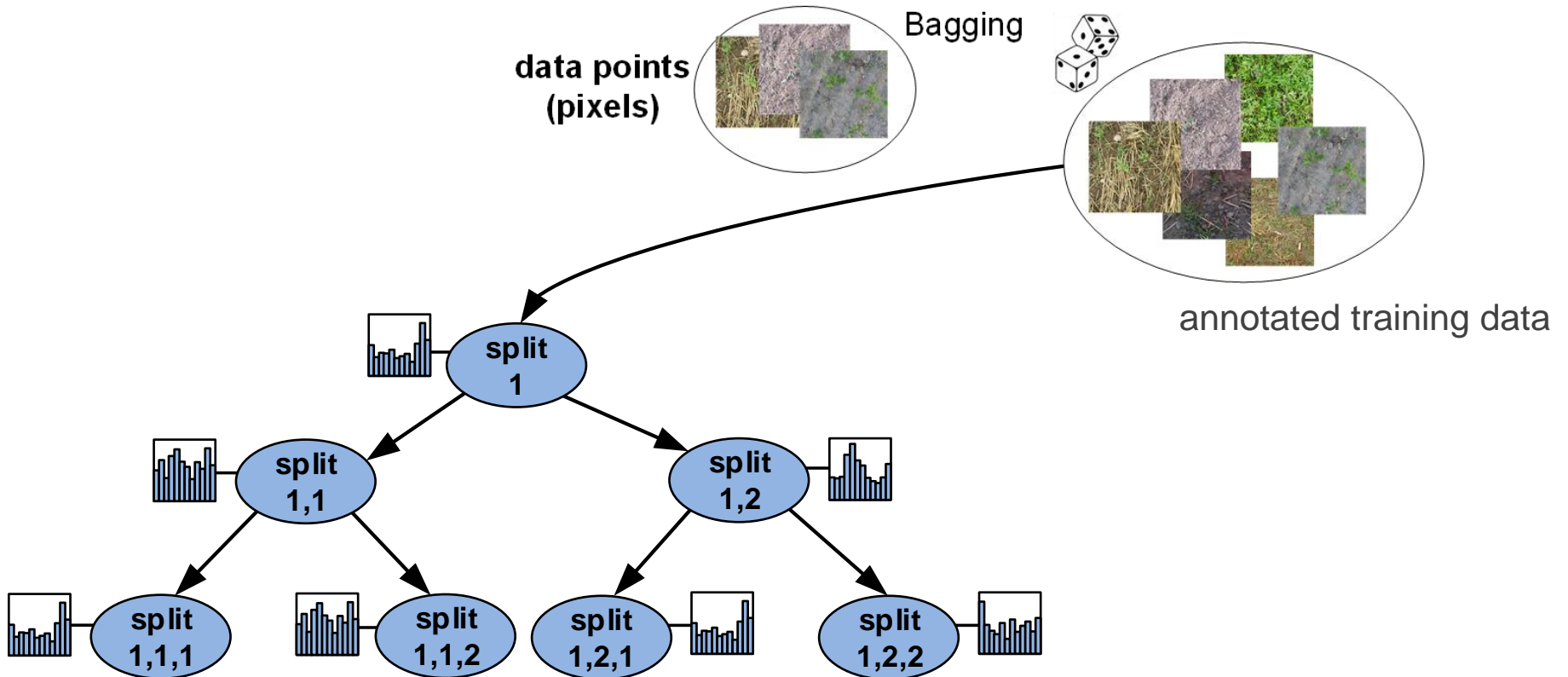


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- Entangled Random Forest
- Supervised Learning



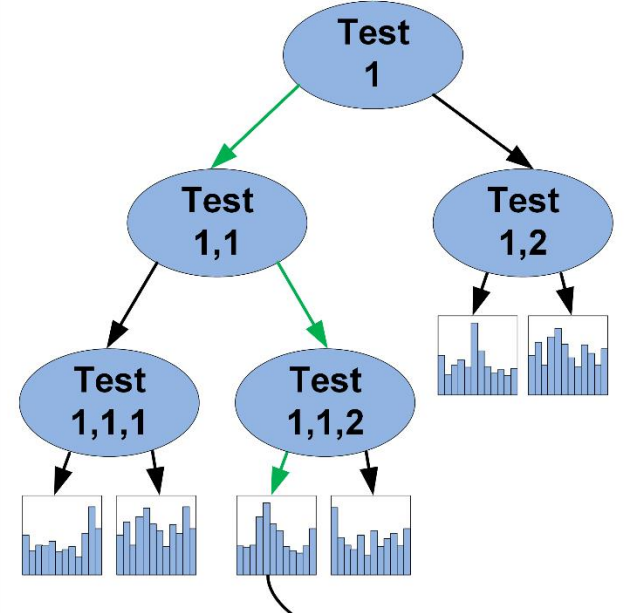




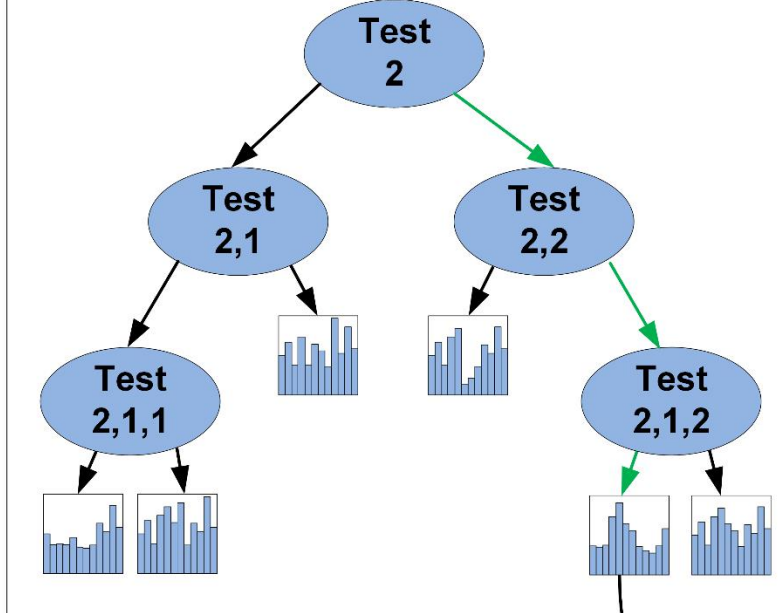
DER ALGORITHMUS – TESTEN



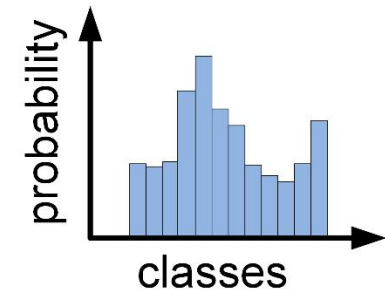
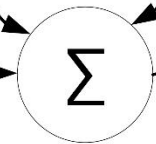
Tree 1

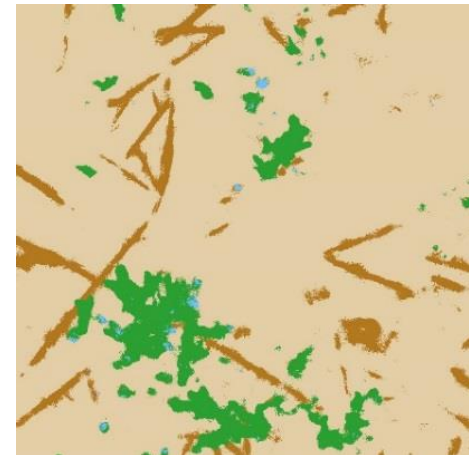
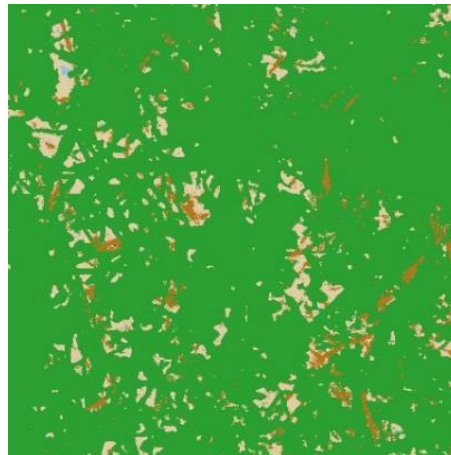
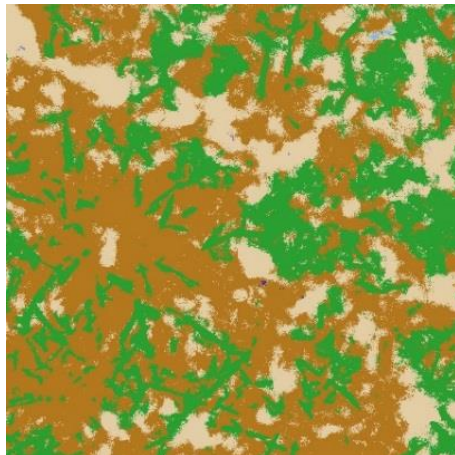


Tree 2



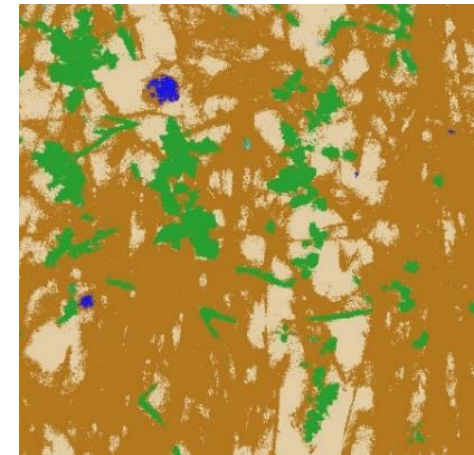
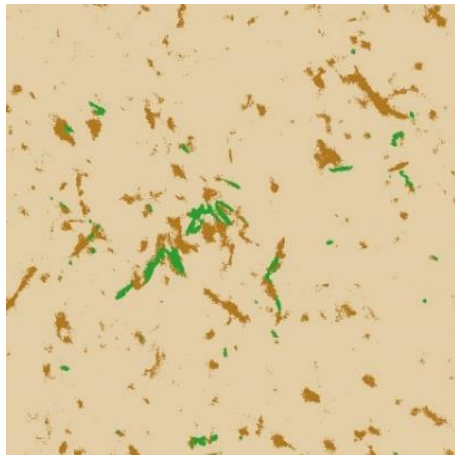
...





■ lebende org. Masse ■ tote org. Masse ■ Erde ■ Steine ■ Biofilm

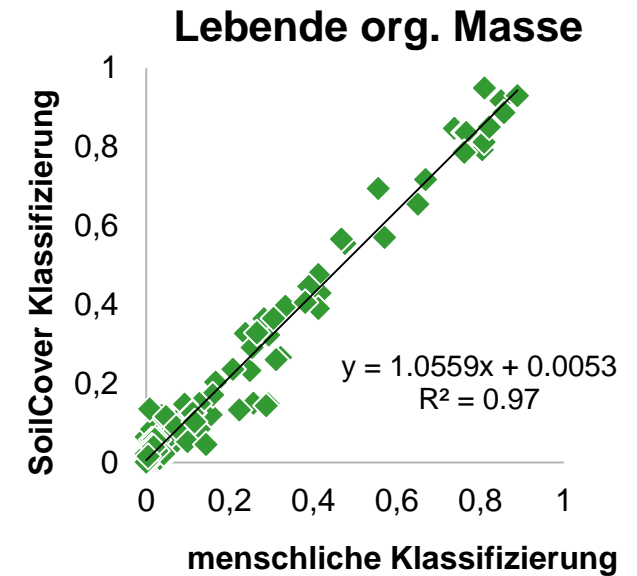
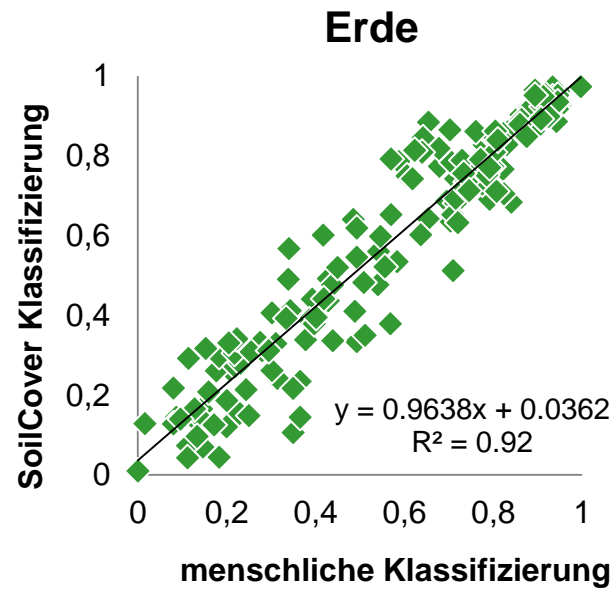
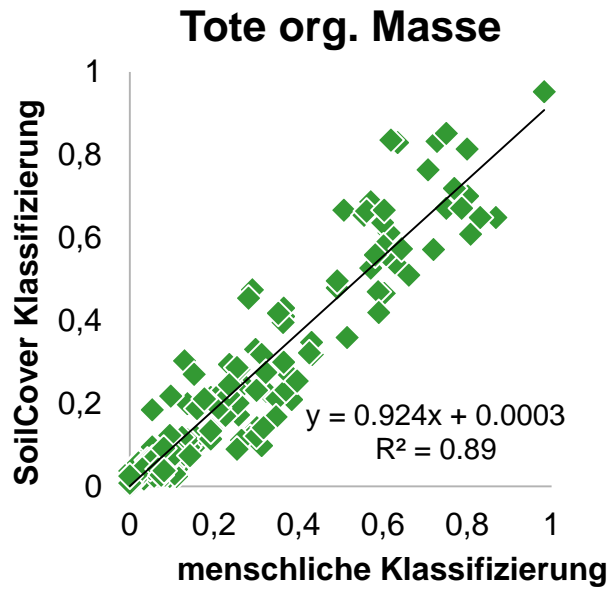
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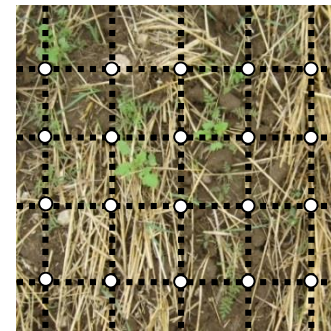
<https://soilcover.josephinum.at>

LIVE DEMO



J. Prankl, Josephinum Research

Validierung mittels Gittermethode



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