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Agroscope



Sensing in mountain pasture ecology

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1 Time series of minidrone images to monitor vegetation changes





Effectivness of sward management



Opportunities and challenges with drone imaging

Drone mapping offers

- Aerial imaging costumized in time and resolution
- Extension of ground data to larger areas
- New insights into vegetation dynamics in space and time

But

- Despite use-friendly equipment, the mountain environment is challenging.
- Wind has a major impact on image quality.
- Legal constraints need to be dealt with.
- New techniques require the build-up of new research skills.

2 GPS tracking of grazing animals to determine local grazing impact

- Self-constructed low-cost trackers (~€200) with improved battery capacity (up to 6 weeks at €30).
- High-frequency tracking (20s) allows the classification of animal activities.





Homburger et al. (2014) PLoS One 9:12, e114522

Applications of GPS tracking

Animal activities in A. viridis stands





Homburger et al. (2015) Movement Ecology, 3:35

P redistribuition by grazing



Opportunities and challenges with animal sensors

Sensors allow

- Long-time observations of animal activities without disturbance by observers
- High-frequency datasets for detailled analyses (also of multiple devices)

But

- Issues of logger failure and representativity need to be considered.
- Need to comply with animal experimentation laws.
- Datasets are complex to analyse.



















Thank you for your attention

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