



Covariation of Sentinel-1 and Sentinel-2 data over the Munich-North-Isar test-site, Germany

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With Sentinel-1 A/B and Sentinel-2 A/B satellites being both now in orbit, a new age of multi-frequency remote sensing has begun to support bio-geophysical parameter retrieval for applications in hydrology. With nominal repetition times of 5 and 6 days respectively and even higher revisit times considering different orbits, simultaneous multi-frequency acquisitions covering the optical and microwave domain are now possible on an operational basis. This setup gives way to new insights and synergistic possibilities in the multi-frequent usage of optical and C-Band SAR data.

In this pico-presentation we discuss the temporal behavior of joint Sentinel-1 and Sentinel-2 acquisitions in terms of reflectance and backscatter over the Munich-North-Isar (MNI) test-site with regard to in-field vegetation and soil measurements. We discuss the outline of such a retrieval scheme and show how a bio- and geophysical parameter retrieval for soil moisture benefits from simultaneous image acquisition. Retrieval results are validated by in-field measurements acquired in an extensive field campaign carried out in 2017 over the MNI test-site by the Department of Geography at LMU Munich.”