



Integration of in situ and hyperspectral remote sensing data for steering plant production systems

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Biotic and abiotic stresses on plant systems, combined with improperly managed vegetative production systems are major sources of suboptimal yields in capital-intensive perennial crops (e.g. citrus, apples, peaches). These inefficiencies should be reduced by the integration of hyperspectral remote sensing, in situ and plant physiological data.

The main objective of IS-HS (Integration of In Situ data and HyperSpectral remote sensing for plant production modeling) is to set up a multidisciplinary research platform to deepen our system understanding and to develop production-oriented schemes to steer capital-intensive vegetation scenarios. Real-time steering in a 10-15 year time-frame is envisaged, where current system state is monitored, and steered towards an ideal state in terms of production quantity and quality.

IS-HS focuses on hyperspectral sensor design, time series analysis tools for remote sensing data of vegetation systems, on the establishment of two stream communication between satellite and ground sensors, on the development of citrus plant production systems, and on the design of in-situ data sensor networks.

The general framework of this system approach will be presented.