

**S7P1****A View from Above: What Satellites Can (and Cannot... Yet?) Tell Us About Agricultural Sustainability, Soil Health, and Climate Resilience**

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**Abstract**

July 2022 marked the 50 year anniversary of the satellite Earth observing era, whose earliest foundations were in agricultural monitoring. After five decades of slow-but-steady progress, we are experiencing an international, trans-sectoral explosion in the use of satellite data for agricultural assessment. While the number and characteristics of satellite missions proliferates, concurrent advances in cloud computing and machine learning/AI are powering a surge in venture capital and public investment alike in this technology's use for everything from agricultural production forecasting, to on-farm decision support tools, to monitoring, measuring, reporting, and verification of "climate-smart" agricultural management.

As we look ahead to the race to reduce agriculture's climate footprint, and the positing of satellite data as a tool to incentivize and enforce mitigative and adaptive agricultural practice adoption, this is a moment to take stock of from whence we came and what is (and is not yet) possible with top-down view satellite data provide. This talk will explore the evolution of EO for agriculture and open up a dialog on these key questions:

- What can satellites tell us about agricultural sustainability, soil health, and resilience to climate change and extreme weather events?
- How can the view they provide be used to inform policy incentives and on-farm decision making that can promote whole ecosystem health?
- Who gets to decide, and who benefits from the use of this data?

