**Estimating soybean plant and harvest dates in Brazil**

Planting and harvesting dates are crucial to accurate crop modeling because they mediate the weather experienced by a crop during its growing season. Robust models of soy yield are especially important in Brazil, whose soy production accounts for 30% of the world’s supply but is vulnerable both to global climate change and to regional climate change induced by widespread deforestation. Unfortunately, field-level soybean planting and harvest data in Brazil are scarce because data collection requires extensive survey work, becoming impractical at scale. We used a host of remotely sensed satellite data products to produce a field-resolution map of planting and harvest dates across Brazil from 2003 to 2017. Our method, which applies timeseries analysis techniques adapted from established estimation methods to a variety of satellite data products, was validated with a 10-year survey dataset comprising 90 soy farms in the soy “hotspot” of Mapitoba. Initial method evaluation suggests RMSE of about 10 days for both planting date and harvest date estimates. The crop timing maps produced with this method can be used to trace spatial and temporal changes in farmer behavior in response to weather forcings, and thus help predict how farmers will shift planting and harvesting in response to anomalies in future climate.