

Title: Tracking the phenology of dryland vegetation with fused satellite imagery

Author: Jessica Walker

Abstract:

Dryland vegetation is arranged in heterogenous patches, while dryland precipitation regimes are typically erratic and unpredictable. These factors complicate the extraction of phenological signals over dryland ecosystems using current satellite sensors, which cannot capture fine-grained spatial details at frequent time intervals. Synthetic datasets created from the fusion of high-spatial resolution (i.e., Landsat) and high-temporal resolution (i.e., MODIS) imagery provide a potential alternative for monitoring dryland vegetation phenology. This talk presents research into the validation and utility of the Spatial and Temporal Adaptive Reflectance Fusion Model (STARFM) for tracking landscape-wide vegetation dynamics over a range of central Arizona dryland ecosystems, from grasslands to ponderosa pine forests. The research demonstrates the complexity of phenological responses within dryland ecosystems and highlights the need for standardized monitoring of phenological trends in these areas.