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# The impact of vegetation changes on soil moisture over the Dry Chaco

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The Dry Chaco ecoregion is the world's largest continuous dry forest. The region is located west of the Paraguay River and east of the Andes in South America. Since the 1980s, the region has undergone an intensive process of forest degradation and fragmentation from selective logging, cattle, charcoal and soybean production. This unprecedented forest degradation causes a disruption in the hydrological cycle and dryland salinity.
This study aims at better understanding the impact of forest degradation on soil moisture and salinity changes over the Argentinian Chaco, using land surface modeling and remote sensing data. More specifically, default climatological vegetation parameters (LAI, NDVI, greenness) in state-of-the-art land surface models (LSM) grouped within the NASA Land Information System (LIS) will be updated using satellite-based dynamic vegetation data. The modeling output will be evaluated against in situ observations and microwave-based satellite retrievals (SMOS, SMAP, ASCAT) of soil moisture.
This poster will show a first spatio-temporal analysis of state-of-the-art long-term LIS simulations using a range of land surface models, along with various retrieval products of soil moisture and vegetation optical depth from SMOS (operational Level 2 and SMOS-IC) and SMAP (operational Level 2) over the Dry Chaco. In addition, preliminary LIS results obtained by dynamically updating vegetation with MODIS-based indices will be presented.