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Presentation Title: Regional Validation of SRTM Elevation Measurements: A comparison with medium-footprint lidar data over various terrains

Abstract: NASA's Laser Vegetation Imaging Sensor (LVIS) is a medium-resolution (~25m), waveform-digitizing, airborne laser altimeter (lidar) system capable of mapping topography (including sub-canopy), canopy-top topography and canopy structure with sub-meter precision and accuracy in dense canopies. Since 2003 it has been used to collect data in support of various NASA programs including the North American Carbon Program, the Solid Earth and Natural Hazards program, and the Interdisciplinary Science Program. Biomes mapped include those in the northeast and mid-Atlantic regions of the US, California and Costa Rica. The LVIS data provided several unique datasets with which to validate elevation measurements made by the Shuttle Radar Topography Mission (SRTM), particularly in assessing data accuracy in forested regions. Comparisons between LVIS canopy-top topography, ground topography, and various canopy height metrics and coincident SRTM elevations will be presented. The full-waveform data product provided by LVIS represents a true 3-d volumetric assessment of canopy material, and can provide a unique insight into the interaction of SRTM with vegetation canopies.