

Name: Jon Barbour
Organization: LDEO of Columbia University
Address 1: Route 9W
Address 2:
City: Palisades
State: New York
Zipcode: 10964
Country: USA
Business Phone: 845-3658-331
Other Phone:
Fax: 845-3658-156
Email: jbarbour@ldeo.columbia.edu
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Presentation Title: MAPPING SURFACE PROCESSES AND TECTONIC
GEOMORPHOLOGY USING SRTM DATA

Abstract: The Shuttle Radar Topography Mission (SRTM) dataset provides an unprecedented opportunity to unify landscape analyses, and we are using it to delineate and characterize geomorphic parameters on a regional scale. When integrated with other regional data sources, our results allow us to make inferences about the roles of climate and tectonics in landscape evolution. Our analyses are based on the use of 3-arcsecond SRTM data to map landscape attributes such as drainage patterns, hillslope curvature, sinuosity, and relief. We will present two examples: (1) the use of hillslope morphology to identify specific mechanisms of hillslope failure in the Italian Apennines, and to assess landslide hazards; (2) the use river morphology and climatology to understand how typhoons affect patterns of erosion in the island mountains of the western North Pacific Ocean.