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## Automated Mapping of Radar-Dark Fluvial Features on Saturn's Moon, Titan

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Titan, Saturn's moon, is the only body in our solar system besides Earth to have liquids on its surface in the form of lakes, rivers, and seas - although the liquids are mainly hydrocarbons like methane and ethane. The liquids on Titan appear to flow in similar ways to those on Earth and create comparable fluvial patterns such as meandering rivers and dendritic fluvial systems. This project utilizes SAR data obtained from the Cassini-Huygens mission via Titan Trek to identify networks of inferred fluvial systems. We focus on data swaths T28 and T29 surrounding Ligeia Mare and Kraken Mare between 210 and 360 Longitude in Titan's northern hemisphere. Previous studies (e.g. Burr et al., 2013) interpreted fluvial networks, principally from radar-light features. We focus on radar-dark features, applying an automated technique from Yang et al (2015) to map networks of presumed fluvial origin and compare them with our own visual mapping. Yang et al. used these automated techniques to map various known fluvial systems on Earth that appear radar-dark. Our application of the technique to the Titan study area is successful in identifying features that we had mapped by hand and other features that we had not identified in our visual mapping. The technique was more successful for imagery with less noise and less successful as noise level increased. The automated technique shows great promise for more widespread, rapid identification and mapping of the fluvial network.