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## Constraining the Thickness and Volume of the South Texas Sand Sheet

Anita Chavez and Juan L. González

School of Earth, Environmental and Marine Sciences, University of Texas–Rio Grande Valley,  
1201 W. University Dr., Edinburg, Texas 78439

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### EXTENDED ABSTRACT

The South Texas Sand Sheet (STSS), spans approximately 7000 km<sup>2</sup> (70 km by 100 km) and encompasses most of Kenedy and Brooks counties, and parts of northern Hidalgo and western Willacy counties (Fig. 1). It overlies and conceals the Pliocene Goliad and the Pleistocene Lissie and Beaumont formations. Despite it representing a physiographic boundary, a recharge area for local aquifers, an archive of climate change and a natural corridor for prehistoric human travel, basic knowledge of the STSS is still lacking. We are constructing N–S and E–W cross sections across the sand dune complexes and sand sheet deposits that dominate the landscape of the STSS, to measure its thickness and quantify its volume. With the construction of stratigraphic cross section of Interstate 69C our initial assumption was that the elevation increase was due to the increase thickness of the sand sheet. However, drilling showed that the increase in elevation was mainly due to the thickness of the underlying formation, the Goliad (Fig. 2). The Sand sheet is largely <3 m thick but can reach 12 m in places. The stratigraphic cross section of Interstate 69E shows how thick some areas of the STSS can be (Fig. 3). A preliminary estimate of the sand volume obtained by plotting the borehole data in RockWorks, places it at 15 x 10<sup>9</sup> m<sup>3</sup> with many boreholes still pending to be including in the calculation. Constraining the volume is important to model recharge rates to local aquifers.

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