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116 Petty Building, PO Box 26170, Greensboro, NC 27402. *Spectral characterization of surfaces in  
shape recognition problems*. Preliminary report.

This talk defines certain spectral characterizations of a shapes (or surfaces) in N-dimensional Euclidean space using the harmonic Steklov eigenfunctions of the region whose boundary is the surface to be characterized. The approach is intrinsic and provides for a Hilbert-like geometric approach to deformable shape classification or pose invariant segmentation. The Hilbert-like inner-product is shown to be associated with solution operators of certain harmonic equations. We discuss the robustness of the characterizations to local topology changes of the surface. (Received February 19, 2018)