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Nicolas Charon* (charon@cis.jhu.edu), Clark Hall, office 317 B, 3400 N. Charles Street, Baltimore, MD 21218. *Applications of geometric measure theory to shape registration: past, present and future.*

This talk intends to make a synthesis of the interest in various concepts borrowed from geometric measure theory within the framework of shape analysis and large deformation models. More specifically, I will explain how such representations like measures, currents, varifolds or normal cycles among others have proved crucial over the past ten years in providing adequate and robust data fidelity terms between curves, surfaces and submanifolds both continuous and discrete and thereby extending the scope of shape analysis to these classes of objects. The talk shall focus on the basic mathematical exposition of these different notions of generalized measures with emphasis on how they apply and compare in problems like diffeomorphic registration. (Received September 10, 2016)