Rigidity and Compactness with constant mean curvature in warped product manifolds

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In this talk I present a rigidity result for volume-constrained critical points of the area functional in a class of warped product manifolds, which includes important models in General Relativity, like deSitter-Schwarzschild and Reissner-Nordstrom manifolds. This rigidity result provides a geometric measure theoretic extension of a celebrate result of Simon Brendle and it allows to characterize limits of boundaries whose mean curvatures converge to a constant.

Joint work with Francesco Maggi.