Stability of sin-cones and cosh-cylinders

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Abstract. This work concerns stability and instability of Einstein warped products with an Einsteinian fiber of codimension 1. We study the cases where the scalar curvature of the warped product and of the fiber are either both positive or both negative to complement the results in [21]. Up to a small gap in the case of sin-cones, the stability properties of such warped products are now completely determined by spectral properties of the Laplacian and the Einstein operator of the fiber. For cosh-cylinders, we are furthermore able to prove a convergence result for the Ricci flow starting in a small neighbourhood. As an interesting class of examples, we determine the stability properties of sin-cones over symmetric spaces of compact type.