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Dominique Kemp* (dekemp@iu.edu). *Extending Known $\ell^2(L^p)$ and $\ell^p(L^p)$ Decoupling Theory.*

The celebrated ℓ^2 decoupling theorem of Jean Bourgain and Ciprian Demeter presented a new perspective on a range of problems related to hypersurfaces with nonzero Gaussian curvature, such as exponential sum estimates, additive energy estimates, local smoothing, and counting solutions to Diophantine inequalities. The same authors also extended their theory to the n -dimensional cone. Following their steps, we prove optimal ℓ^2 and ℓ^p decoupling results for a new class of surfaces which have some vanishing curvature. (Received January 21, 2020)