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Isoperimetric inequality outside convex bodies

We prove that the area of a hypersurface which traps a given volume outside of a convex body in Euclidean n-space must be greater than or equal to the area of a hemisphere trapping the given volume on one side of a hyperplane. This result generalizes the classical isoperimetric inequality. The proof rests on a sharp estimate for total positive curvature of a hypersurface whose boundary lies on a convex body and meets that body orthogonally.

This is joint work with J. Choe and M. Ritore.