

ANALYSIS AND DIFFERENTIAL GEOMETRY  
SEMINAR

*Deformations of unbounded convex bodies and hypersurfaces*

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**Abstract:** We study the topology of the space  $K$  of complete convex hypersurfaces of  $n$ -dimensional Euclidean space which are homeomorphic to a hyperplane. In particular, using Minkowski sums, we construct a deformation retraction of  $K$  onto the Grassmannian space of hyperplanes. So every hypersurface in  $K$  may be flattened in a canonical way. Further, the total curvature of each hypersurface evolves continuously and monotonically under this deformation. We also show that, modulo proper rotations, the subspaces of  $K$  consisting of smooth, strictly convex, or positively curved hypersurfaces are each contractible, which settles a question of H. Rosenberg.

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MATHEMATICS AND COMPUTER SCIENCE  
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