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Evolution of hypersurfaces by powers of the scalar curvature

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Abstract. We study the evolution of a closed hypersurface of the euclidean space by a flow whose speed is given by a power of the scalar curvature. We prove that, if the initial shape is convex and satisfies a suitable pinching condition, the solution shrinks to a point in finite time and converges to a sphere after rescaling. We also give an example of a nonconvex hypersurface which develops a neckpinch singularity.

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