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**The curvature of carrying simplices for competitive
Lotka-Volterra systems**

The N dimensional totally competitive Lotka-Volterra equations have a Lipschitz invariant manifold that attracts all points in the first quadrant except the origin. For $N=2$ it is known that this manifold is either convex or concave, and for $N=3$ numerical evidence suggests that the curvature of the manifold cannot change sign. I shall discuss a new method for proving the $N=2$ case and also outline some recent progress towards understanding the $N=3$ case, including special cases where the manifold can be shown to be convex, saddle-like or a developable surface.