1064-53-348   **Stephanie B. Alexander** and **Richard L. Bishop*** (`math@illinois.edu`), Department of Mathematics, 1409 W Green St, Urbana, IL 61801, and **Robert Ghrist**. *Comparison geometry, total curvature, and pursuit-evasion games.* Preliminary report.

We explain why CAT(K) spaces are an appropriate setting for pursuit-evasion games. For a given evader curve, the flow of pursuit curves is a time-dependent gradient flow. We give lower bounds on capture times and an escape criterion in terms of integral of the square of the curvature of a pursuit curve. We had previous estimates on total curvature of a pursuit curve when the evader escapes, and this criterion shows they are sharp. We define a model pursuit-evasion game in the plane and study comparisons for the separation and its derivative when the evader has variable speed. (Received September 14, 2010)