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Stephanie Alexander, Richard Bishop and Robert Ghrist* (ghrist@math.upenn.edu), 200 S. 33rd St., Philadelphia, PA 19104. *Geometry in games of pursuit and evasion.*

We show how circumradius and asymptotic behavior of curves in spaces of curvature bounded above (e.g., CAT(0) spaces) are controlled by growth rates of total curvature. We apply our results to pursuit and evasion games of capture type with simple pursuit motion, generalizing results that are known for convex Euclidean domains, and obtaining results that are new for convex Euclidean domains and hold on playing fields vastly more general than these. In the continuous-time games, interesting questions concerning existence and uniqueness of solutions to gradient-like fields on metric spaces arise, to which recent results of Chanyoung Jun apply. (Received September 08, 2009)