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Robert Ford* (ford5047@bellsouth.net), Auburn University, Department of Mathematics and Statistics, Auburn, AL 36849-5310. *Path Curvature on a convex roof (or off it)*.

Given a set of rectangles, R_1 through R_k , where R_i and R_{i+1} share a common edge and these common edges are congruent and parallel to each other. The resulting "roof" is part of the surface of a convex body. We'll consider paths from one corner of this "roof" to the opposite corner. Extending the common edges to lines we'll call ridges and rectangles to planar strips, we can allow such paths to go "off the roof". Path curvature is computed for a polygonal path by simple adding up the curvatures of each intermediate vertex. More general paths use a sequence of polygonal approximations to compute curvature. We'll then attempt to discern when the path of least curvature goes off the roof or when it is the shortest path. (Received September 10, 2007)