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Gary R. Greenfield* (ggreenfi@richmond.edu), Math. and Comp. Sci., University of Richmond, Richmond, VA 23173. *On Ricochet Compositions for N -gons*. Preliminary report.

Ricochet compositions (see I. de Kok et al., 2007 Bridges Conference Proceedings, 177–180) are generated by placing a particle on each side of an n -gon, assigning it a starting angle, and assigning it a color. Then, one at a time, each particle moves until it encounters an existing line segment at which point it is reflected — the ricochet — and is paused so that the next particle may take its turn. There is also a polygon-fill rule: if a particle ricochets off its own orbit, then the area it has just enclosed is filled using its assigned color. We consider schemes for generating resolution free ricochet compositions on convex n -gons for $n \geq 3$. Further, we examine the use of evolutionary computation techniques for automatically generating ricochet compositions with differing styles. (Received September 01, 2008)