

**Meeting:** 1003, Atlanta, Georgia, AMS CP 1, AMS Contributed Paper Session

1003-40-1237      **Aaron C. Cinzori\*** (cinzori@hope.edu), Department of Mathematics, Hope College, P.O. Box 9000, Holland, MI 49423, and **Thomas Scofield, Andrew Craker** and **Erin Wicker**. *Infinite Spirals and Polygonal Paths*. Preliminary report.

Suppose that we are given the points  $P_0$ ,  $P_1$ , and  $P_2$  in the plane, the parameter  $t \in (0, 1)$ , and the recurrence  $P_{k+3} = tP_k + (1 - t)P_{k+1}$  for  $k = 0, 1, 2, \dots$ . The sequence  $\{P_n\}_{n=0}^{\infty}$  converges to a point  $P$ . We will discuss when the piecewise linear spiral connecting these points has a length that may be represented in a natural way as a geometric series. We will also show that, when this is not the case, the length is in some sense asymptotic to a geometric series. (Received October 04, 2004)