1014-06-1691 **M p Nolte*** (mpnt3c@umr.edu) and **Matt Insall**. *Generating a Finite Subset of a Lattice of Convex Sets.* Preliminary report.

In [I], it was observed that geometric arrangements of (finitely many) generators in the lattice of convex subsets in the plane (and hence of a Hilbert Space) can have a profound effect on the lattice generated. Specifically, some fairly innocuous-looking changes can lead from a situation in which the lattice generated is finite, to a situation in which the lattice so generated is infinite. We examine the example of a triangle with three finite line segments extending outward from each side. The example of the equilateral triangle will lead to the following conjecture:

Let C denote the lattice of closed convex subsets of the plane, let Δ be an equilateral triangle with sides s1, s2, s3, and let l1, l2, l3 be line segments lying outside the interior of Δ, with l1 $\bigcap$ s1 = p1, l2 $\bigcap$ s2 = p2, l3 $\bigcap$ s3 = p3, such that l1 $\perp$ s1, l2 $\perp$ s2, and l3 $\perp$ s3. Then the sublattice of C that is generated by $\{\Delta$, l1, l2, l3$\}$ is finite.

Conditions for the generation of a finite sublattice will be discussed for an equilateral triangle and all other regular n-gons replacing the triangle.

[I] M. Insall: "Geometric Conditions for Local Finiteness of a Lattice of Convex Sets", Mathematica Moravica, Volume 1. 1997 (Received September 28, 2005)