

**Author:** Valentino Lanzone (Potenza)

**Title:** Search algorithms in the Hughes plane of order 25

**Summary:**

We investigate transitive arcs in the Hughes plane  $\pi$  of order 25 using the structure of the collineation group of  $\pi$ . We prove that the only ovals in  $\pi$  which are preserved by a non-trivial collineation group of order at least 4 are the Room ovals that Biliotti and Korchmáros obtained by extending a conic of the Desarguesian subplane  $\pi_0$  of  $\pi$  to an oval of  $\pi$ .