

Some geometry on the space of 1–factors of K_6

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The set of 1–factors of K_6 is a particularly appealing example of a Fischer space (an order 2 partial linear space with only affine or dual affine planes). There is a well known correspondence between these spaces and 3–transposition groups. On the other hand, the factorization theorem for K_6 has its 19th century geometric analog in Veronese’s Decomposition for the Mystic Hexagram Configuration.

In this talk we will use this correspondence and Veronese’s result to induce a geometric study of the forementioned Fischer space. Finally, we will visualize this geometry on $L(K_6)$, the lattice of partitions of the basic 6–set, with the aid of an outer automorphism of $\text{Symm}(6)$.