

WANDERING SUBSPACES AND A PROBLEM OF S. SHIMORIN

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ABSTRACT. A theorem, due to H. Wold and J. von Neumann, classifies every isometry on a Hilbert space as a direct sum of a unitary operator and a shift generated by some *wandering subspace*. In this talk, we will discuss how far this generalises (or does not) beyond isometries, for instance, in the *m-isometries* or *m-concave* settings. Starting with the positive results of S. Richter for *analytic concave operators*, we move to the problem of S. Shimorin for *higher-order m-concave operators* and discuss what makes it difficult to solve. We finally talk about a near counterexample of A. Anand, S. Chavan and S. Trivedi.