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Families of self-affine maps

Let $f_1, f_2, \ldots, f_n$ be a set of contraction maps. We define the IFS based on $f_1, f_2, \ldots, f_n$ as the unique non-trivial compact operator K such that $K = \cup f_i(K)$. In this talk we consider the very simple IFS coming from the two contraction maps, $f_1(\vec{v}) = A\vec{v} - \vec{a}$ and $f_2(\vec{v}) = A\vec{v} + \vec{a}$. Here we will consider the structure of the IFS based upon the matrix A, considering such things as for which A is the IFS connected, or totally disconnected, or having interior? There is a surprising rich structure to these questions.