Andrew Vince* (avince@ufl.edu), Gainesville, FL 32611, and Michael Barnley. The Eigenvalue Problem for an Iterated Function System.

For an iterated functions system \( \mathcal{F} = \{ \mathbb{R}^n; f_1, f_2, f_3, \ldots \} \), the Hutchinson operator \( F : \mathcal{H} \to \mathcal{H} \) is defined on the space \( \mathcal{H} \) of nonempty compact subsets of \( \mathbb{R}^n \) by

\[
F(B) = \bigcup_{f \in \mathcal{F}} f(B).
\]

We formulate and discuss an analog of the classical eigenvalue problem, namely to find a nonzero \( \lambda \in \mathbb{R} \) and a nonempty compact subset \( X \) of \( \mathbb{R}^n \) such that

\[
F(X) = \lambda X.
\]

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