Fractal morphisms

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The talk is based on joint work with Michael Barnsley and Brendan Harding.

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Many fractal constructions have a well-defined hierarchy of pieces. We consider mappings between fractals which preserve pieces. Examples include Peano curves and mappings between quadratic Julia sets. We give a criterion for the continuity of such mappings and study whether they preserve dimension and measure. As an application, we study 'fractal scanning' — the detection of small patterns in large images.