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Fractals Based on Iterative Structural Self-Cloning Method. Preliminary report.

A methodology of Structural Self-Cloning (SSC) is introduced, which consists of a series of functions with various combinations of transformations including rotations, translations, scaling and affine transformations. The ideas of line segments and rectangle frames are used for setting the parameters of 2D- transformations in generators for fractals. This methodology of SSC has been successfully implemented as an add-in on PowerPoint.

An important feature of SSC is that it can avoid the difficulties of assigning proper values for parameters of transformations and growing exponentially during iterations by visualizing and introducing constant consuming respectively. Moreover, SSC also presents a user-friendly interface for tuning transformations based on visual results of previous iterations directly.

A few uniform pictures, symmetric patterns, tiling, weavings, illusions and many more have been designed successfully by using SSC without iteration. By embedding recurrent objects in the generator, SSC can also be used for designing contraction mappings, classical fractals, self-similarity, attractors, artificial nature, visual design and Chinese-paintings. (Received September 27, 2006)