

Illustrating Mathematics ICERM, Brown University, October 29th

Complex Trees: Structural Stability of Connected Self-similar Sets

arXiv:1902.11282



UNIVERSITAT DE
BARCELONA



Bernat Espigulé

bernat@espigule.com

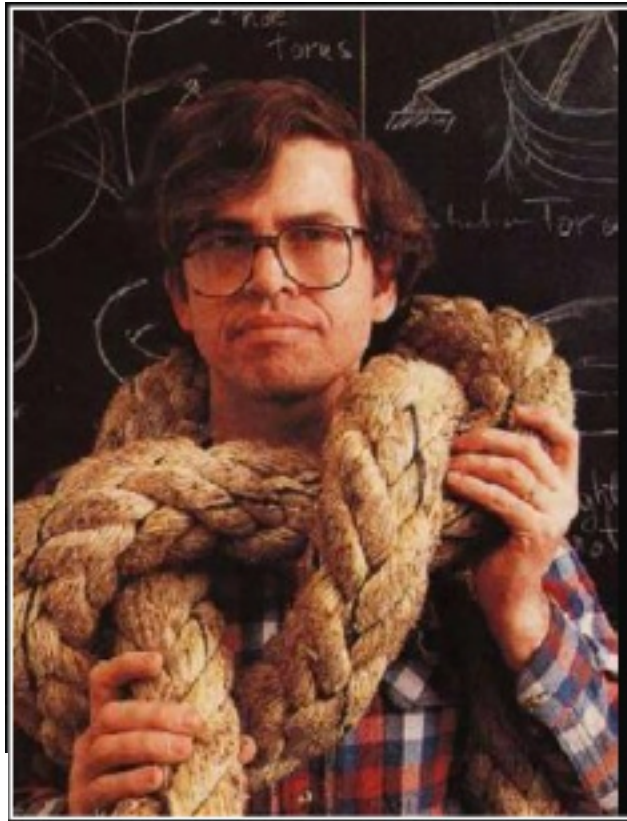
Xavier Jarque & Núria Fagella

IMUB

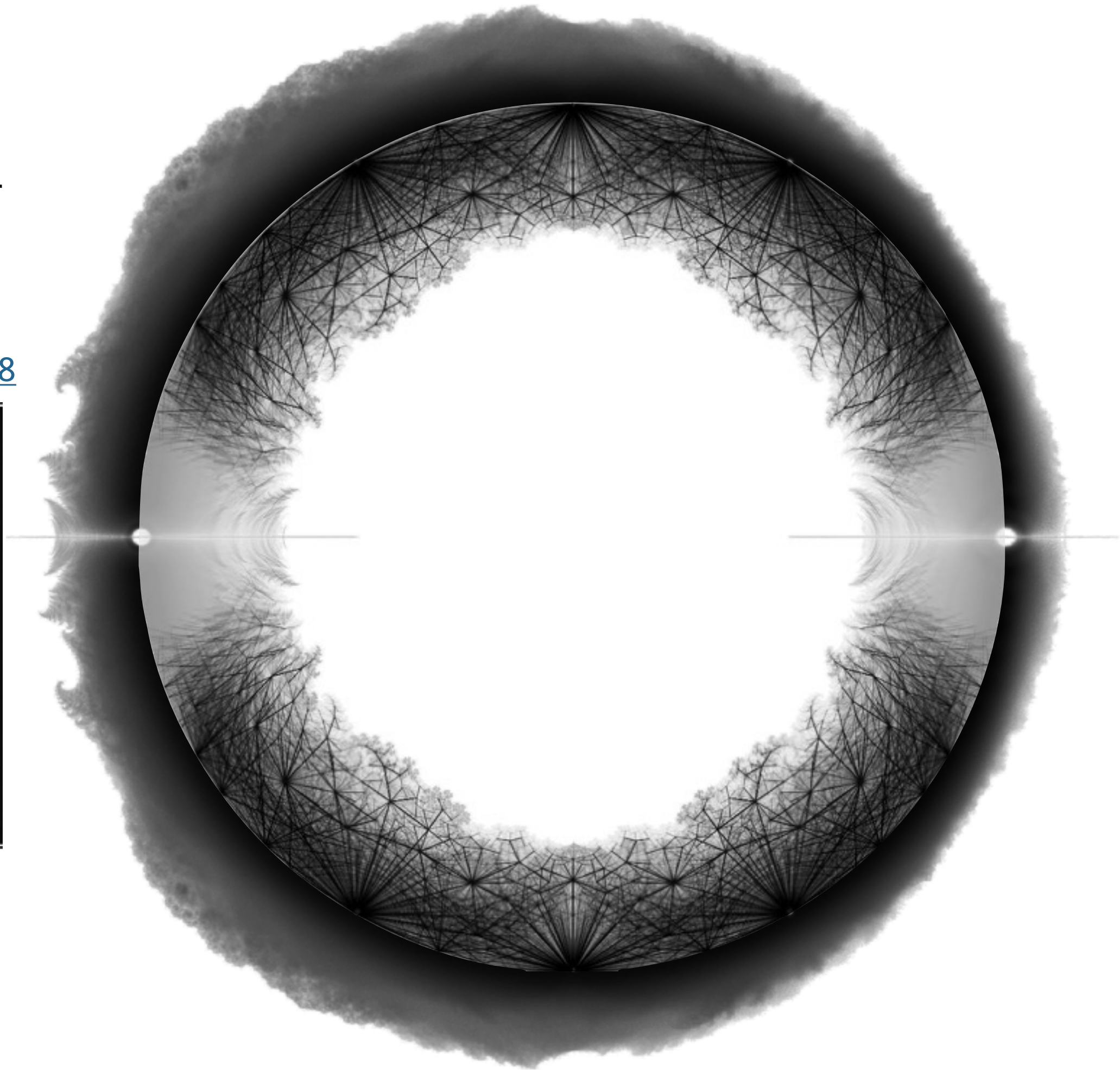
Thurston's last paper

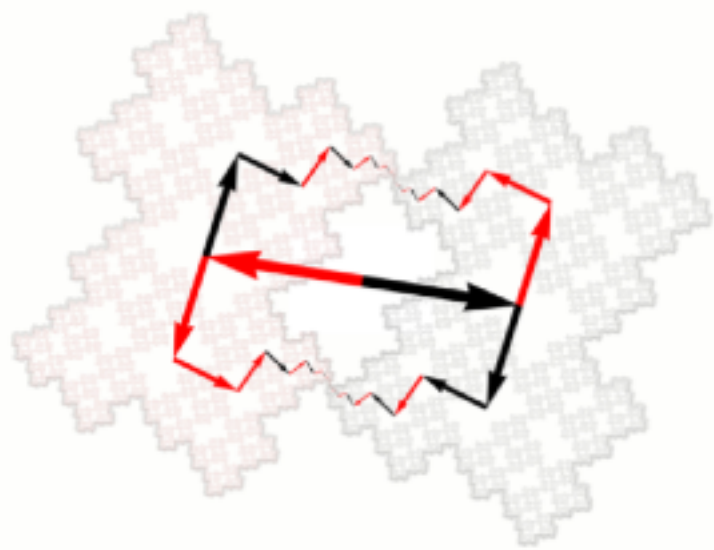
ENTROPY IN DIMENSION ONE

arxiv.org/abs/1402.2008

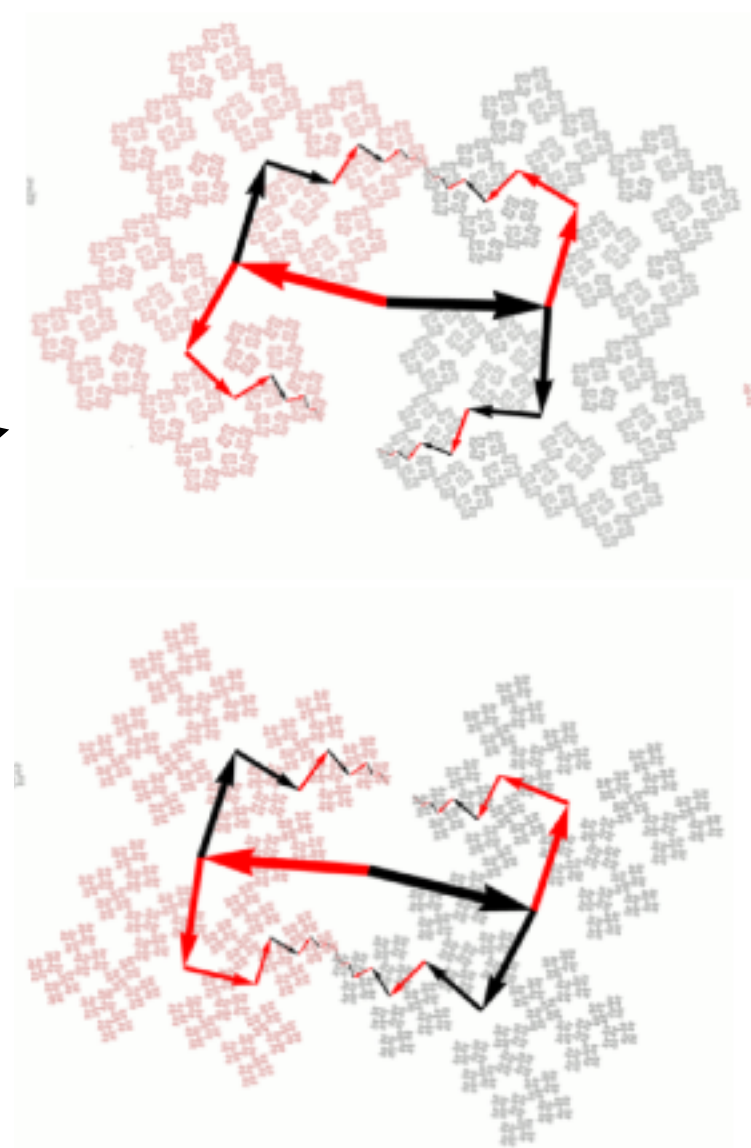


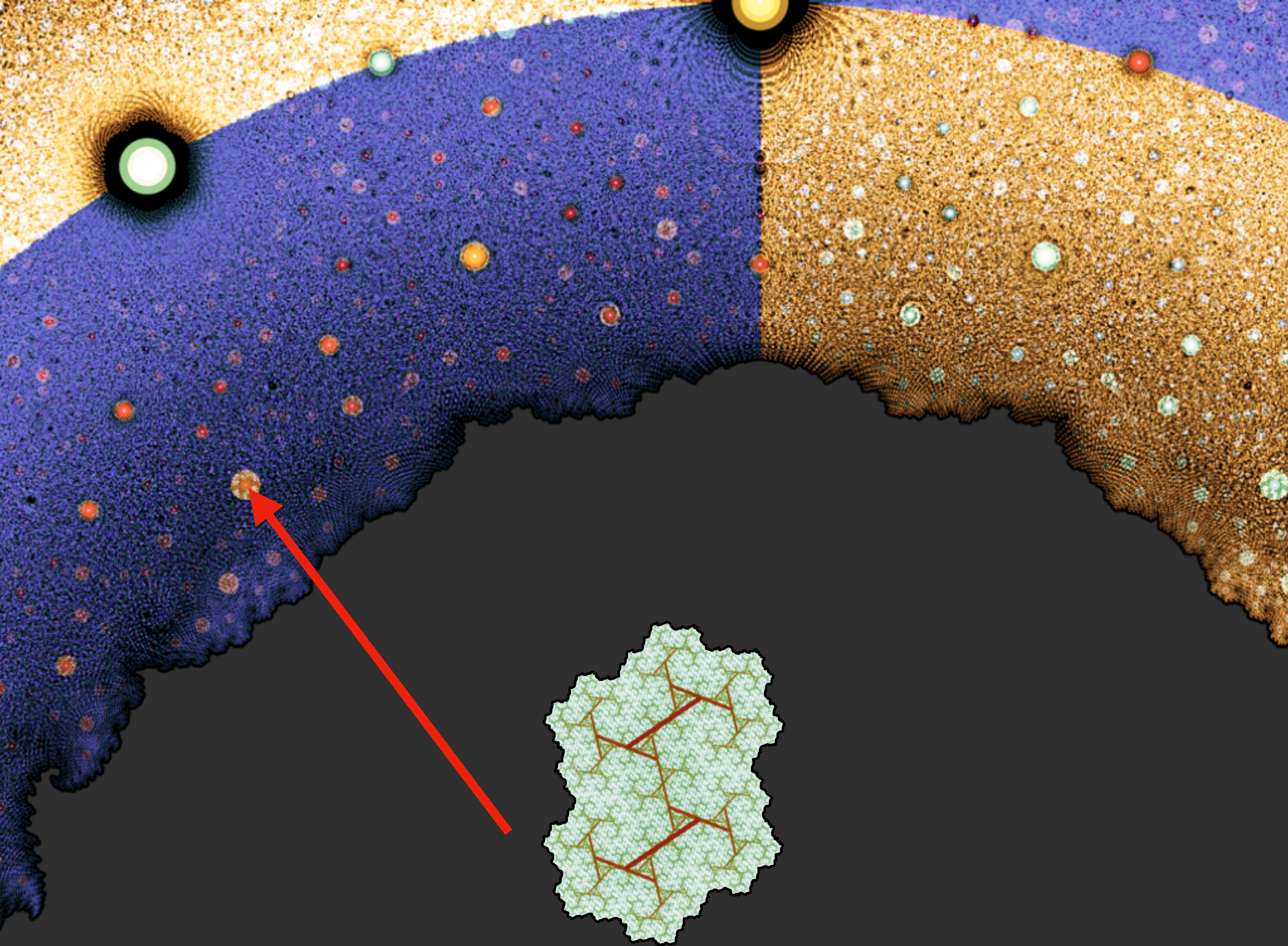
Bill Thurston
(1946 - 2012)

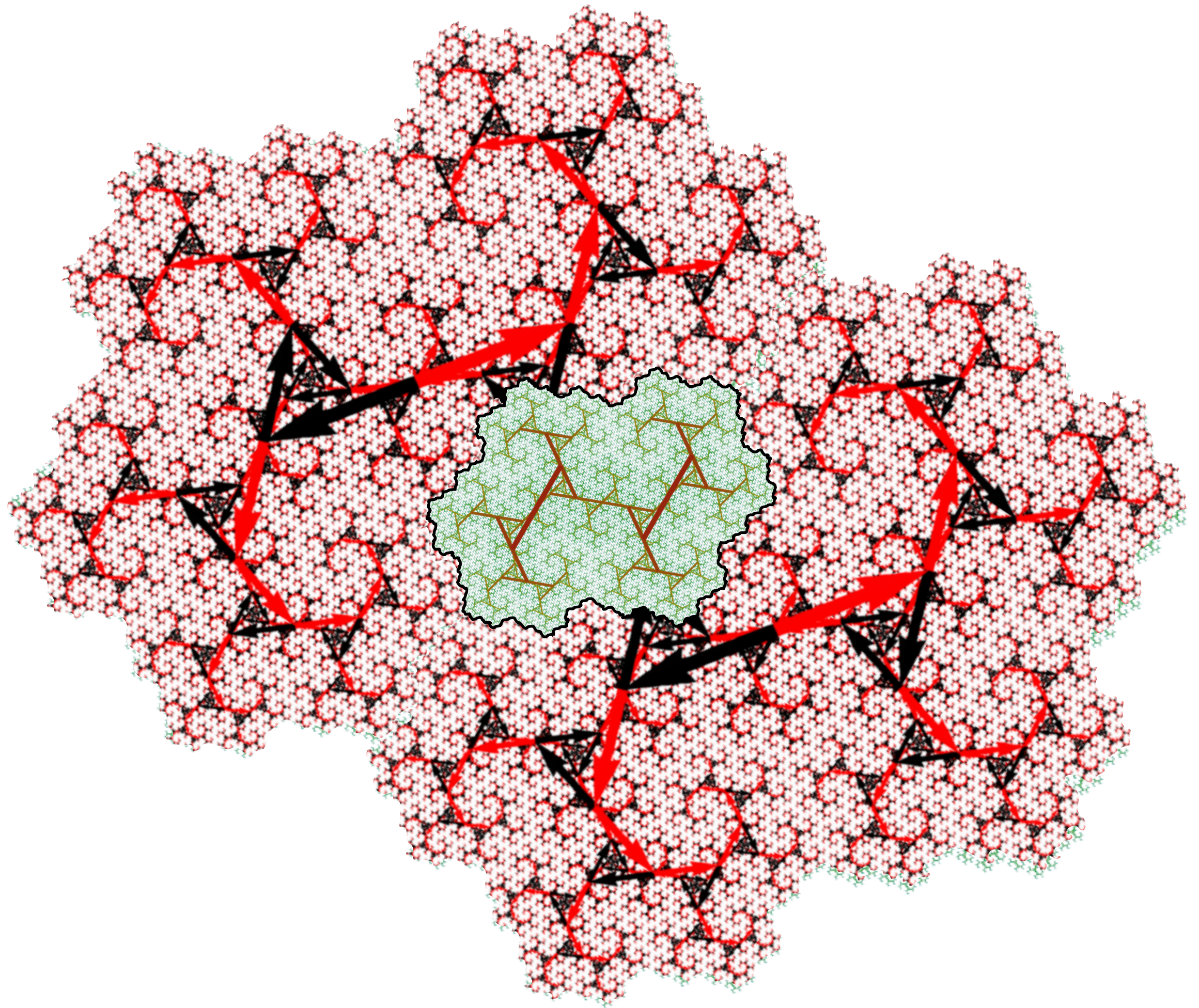


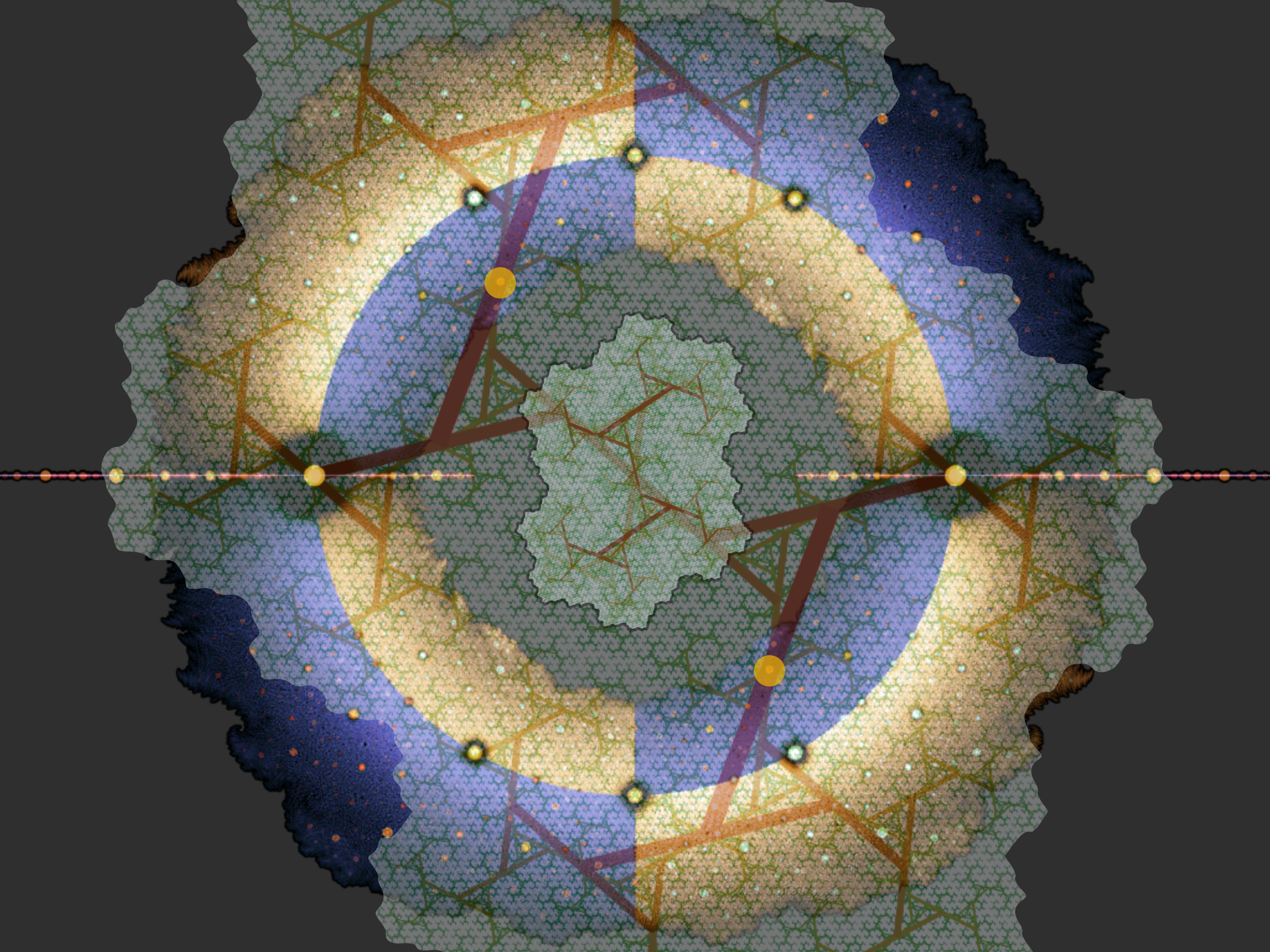


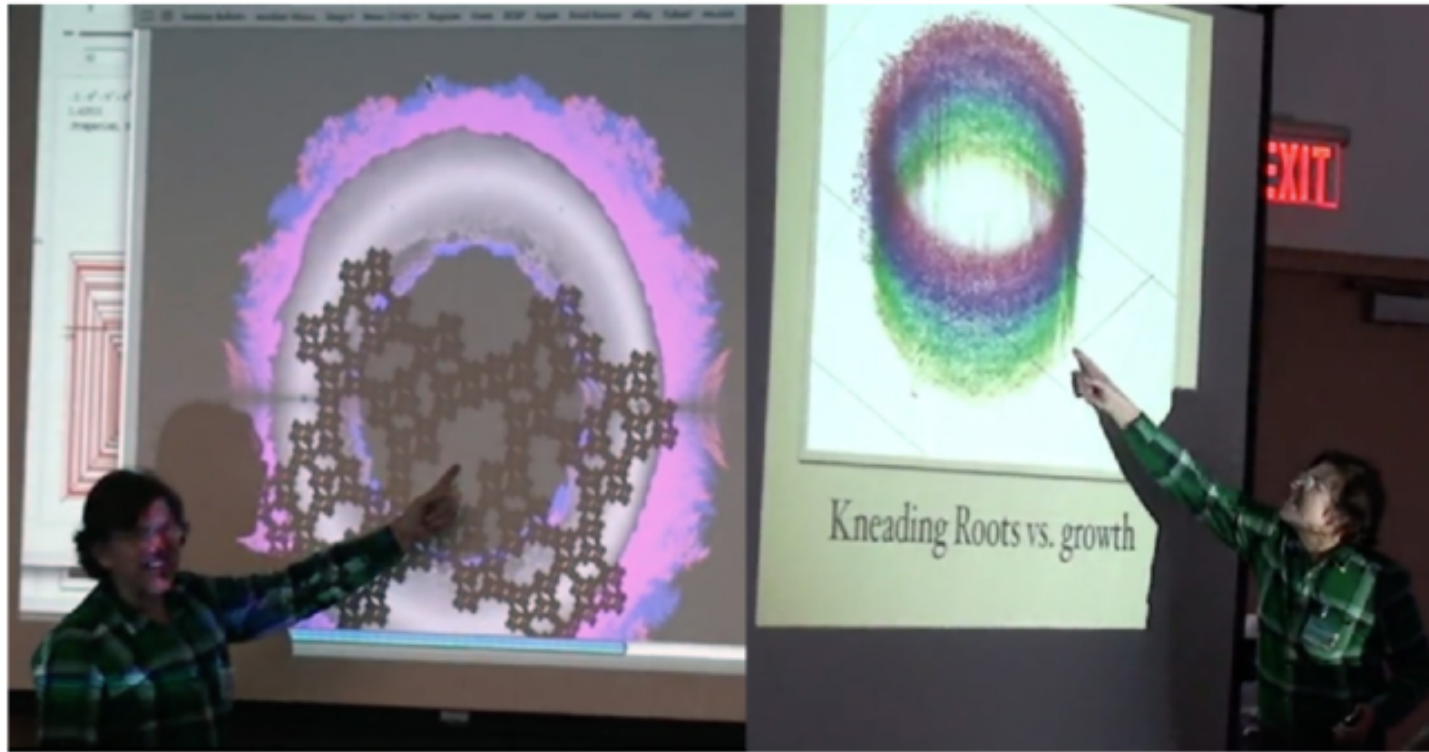
2-gon complex tree with a pair of intersecting points encoded by the following branch path pairs: 122212121...~2112121212... and 11121212..~2221212121... . From these tip-to-tip equivalence relations we can jump to a pair of new families of connected self-similar sets:





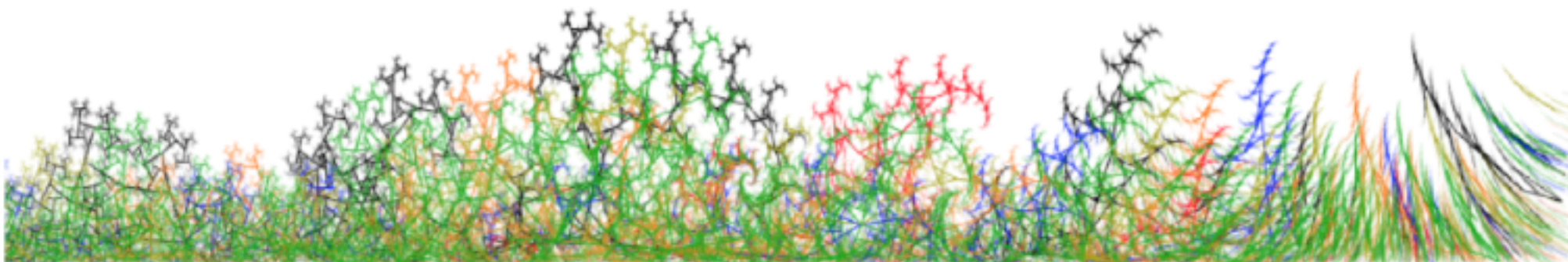
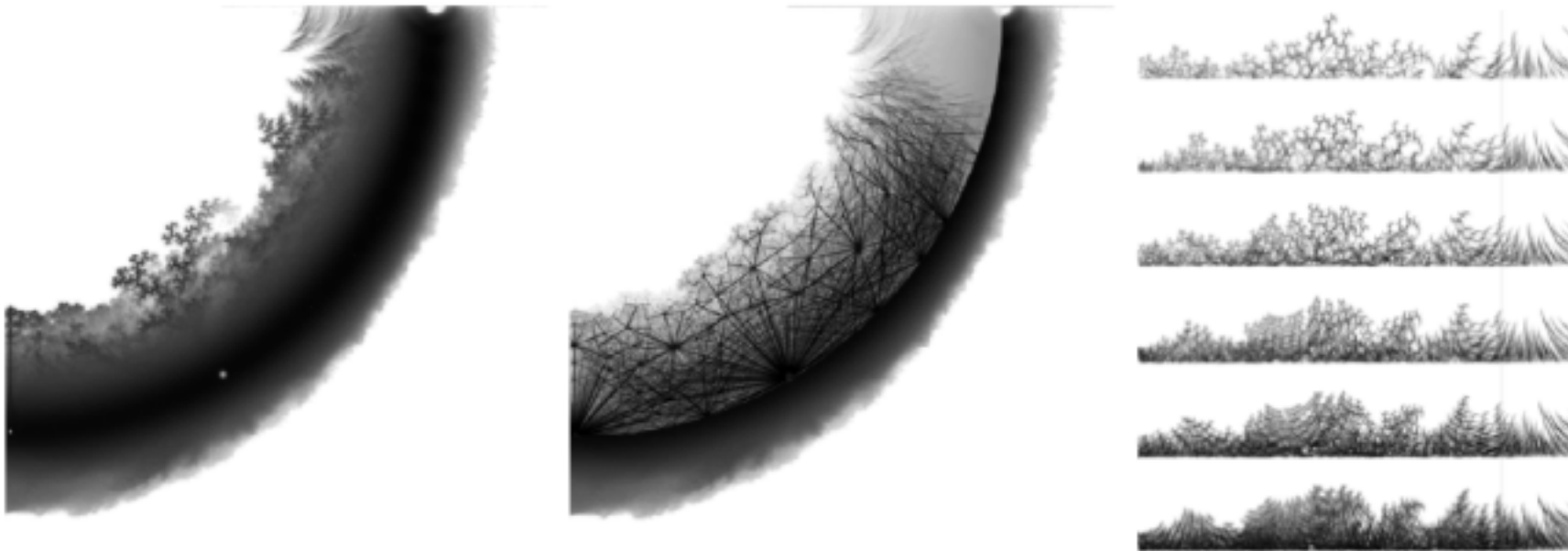
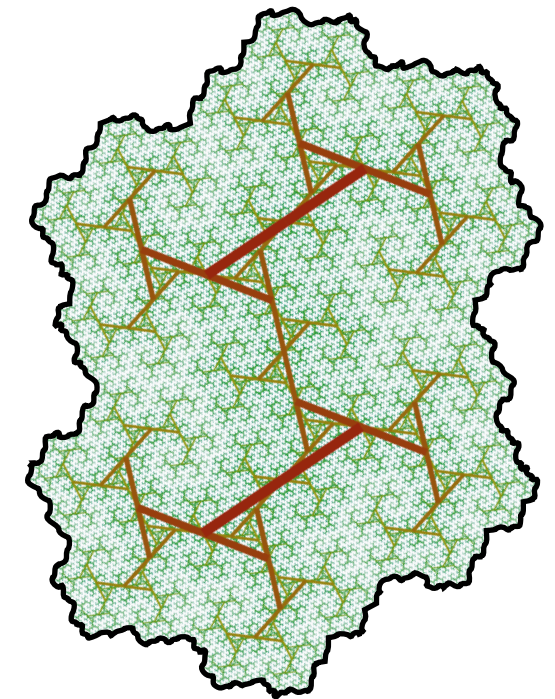






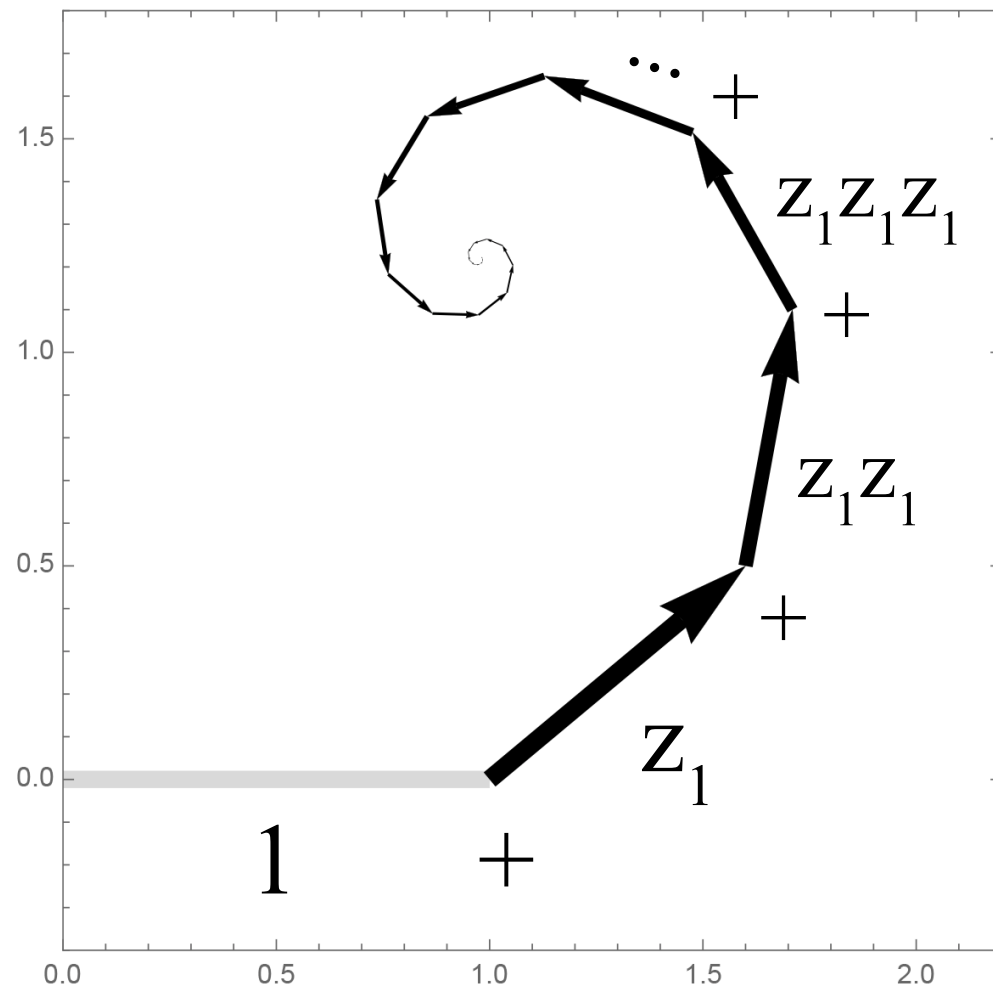
Bill Thurston presenting M , M_0 , and the Thurston Set, Jackfest 2011

[Structure of Entropy: The hidden dimensions](#)

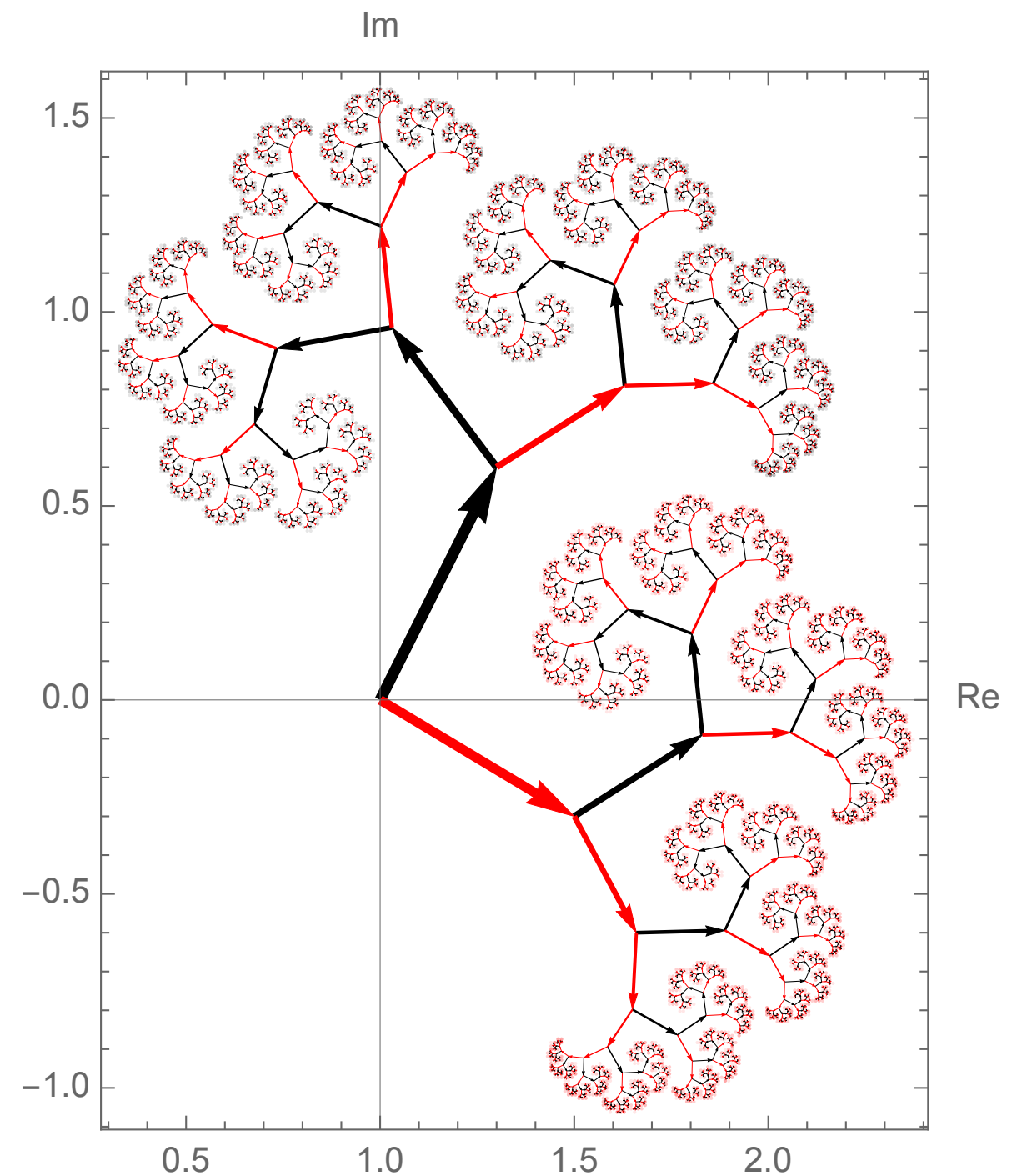


Internal structure of M illustrated by complex trees' piece-to-piece connectivity roots. 2018

Geometric series $\longrightarrow$ Complex tree



$$T_A = T\{z_1\} \longrightarrow T_A = T\{c_1, c_2\}$$



n – ary complex tree $T\{c_1, c_2, \dots, c_n\}$ with $0 < |c_1|, |c_2|, \dots, |c_n| < 1$