

Stochastic Fractals

- The Chaos Game



base point



current point



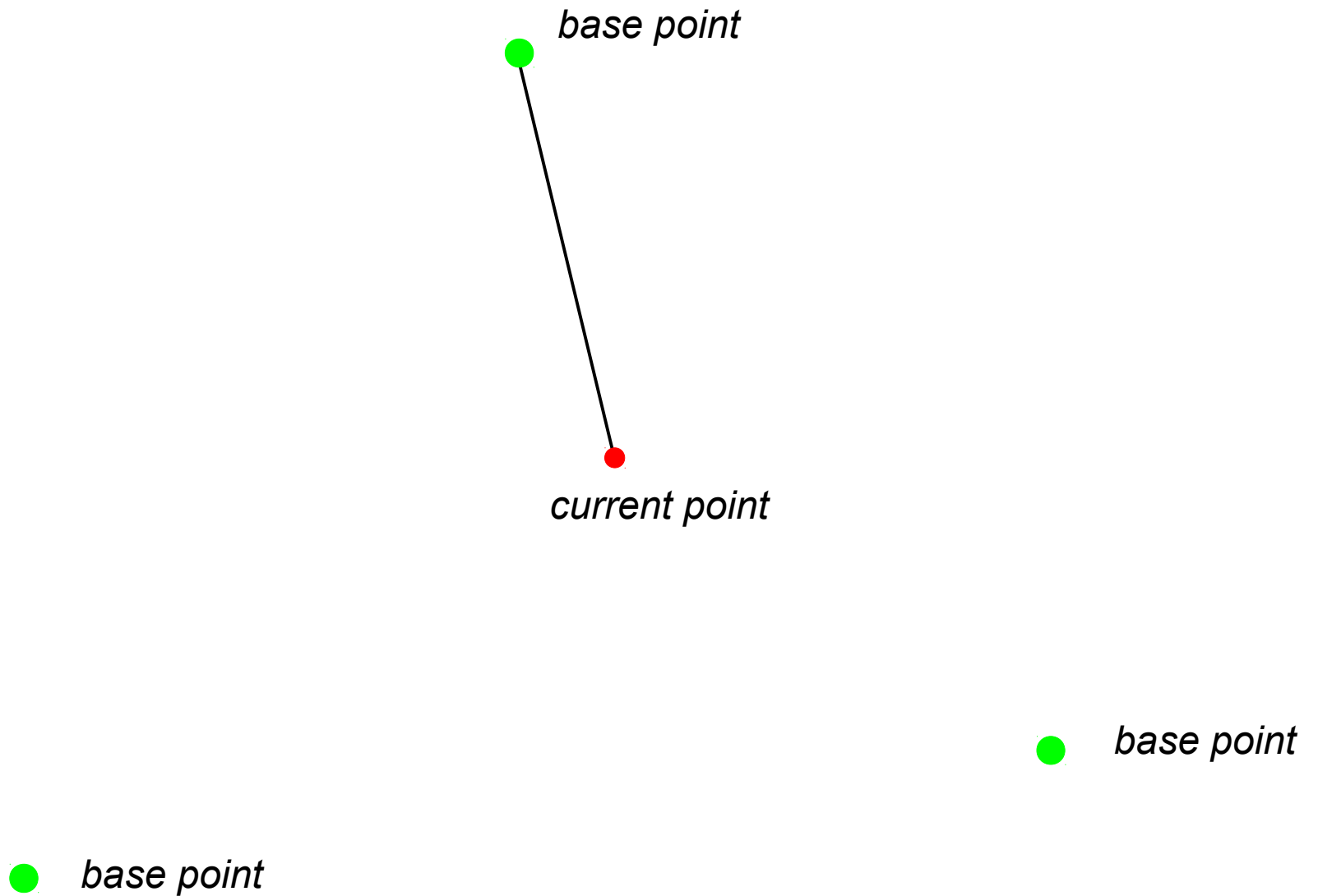
base point



base point

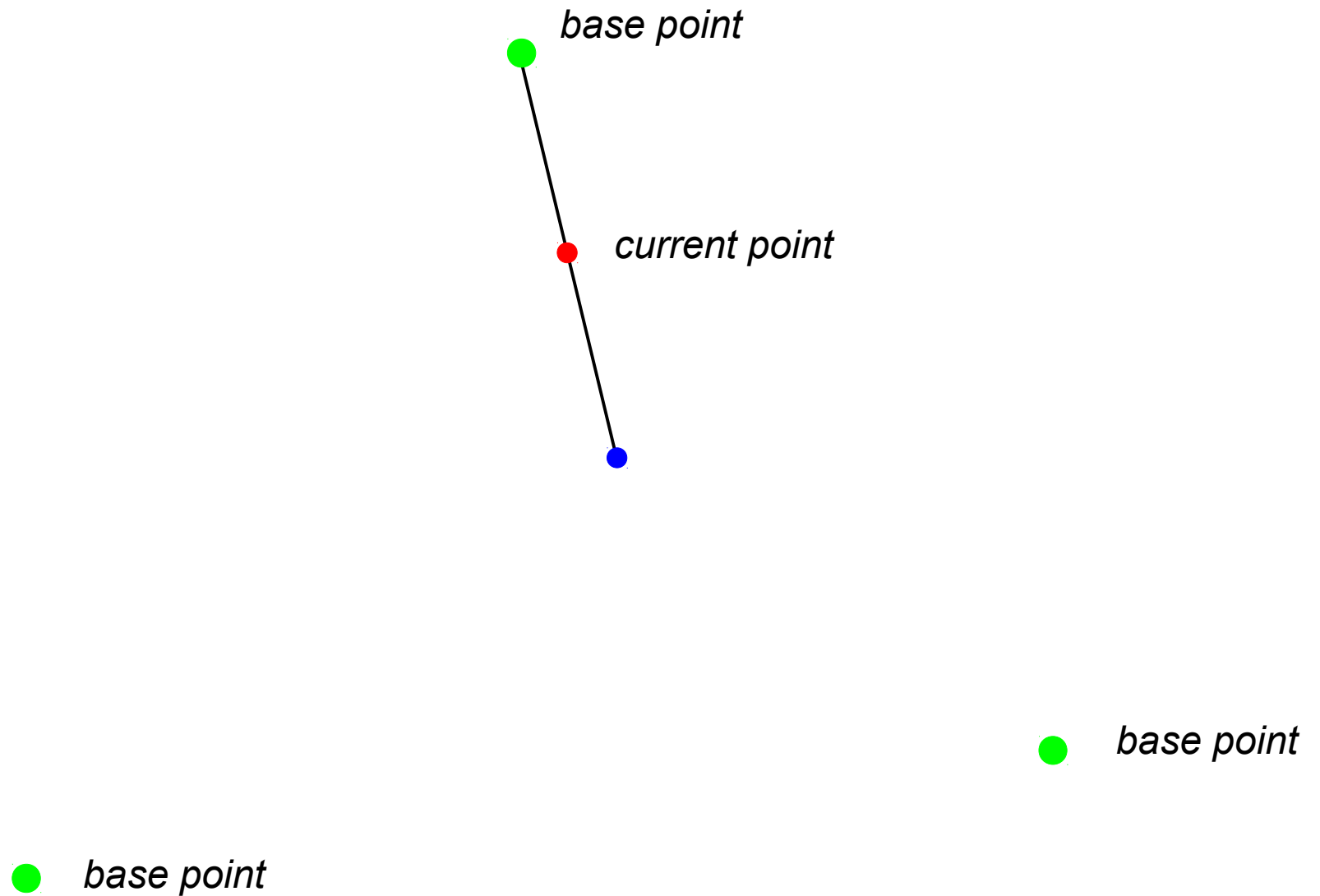
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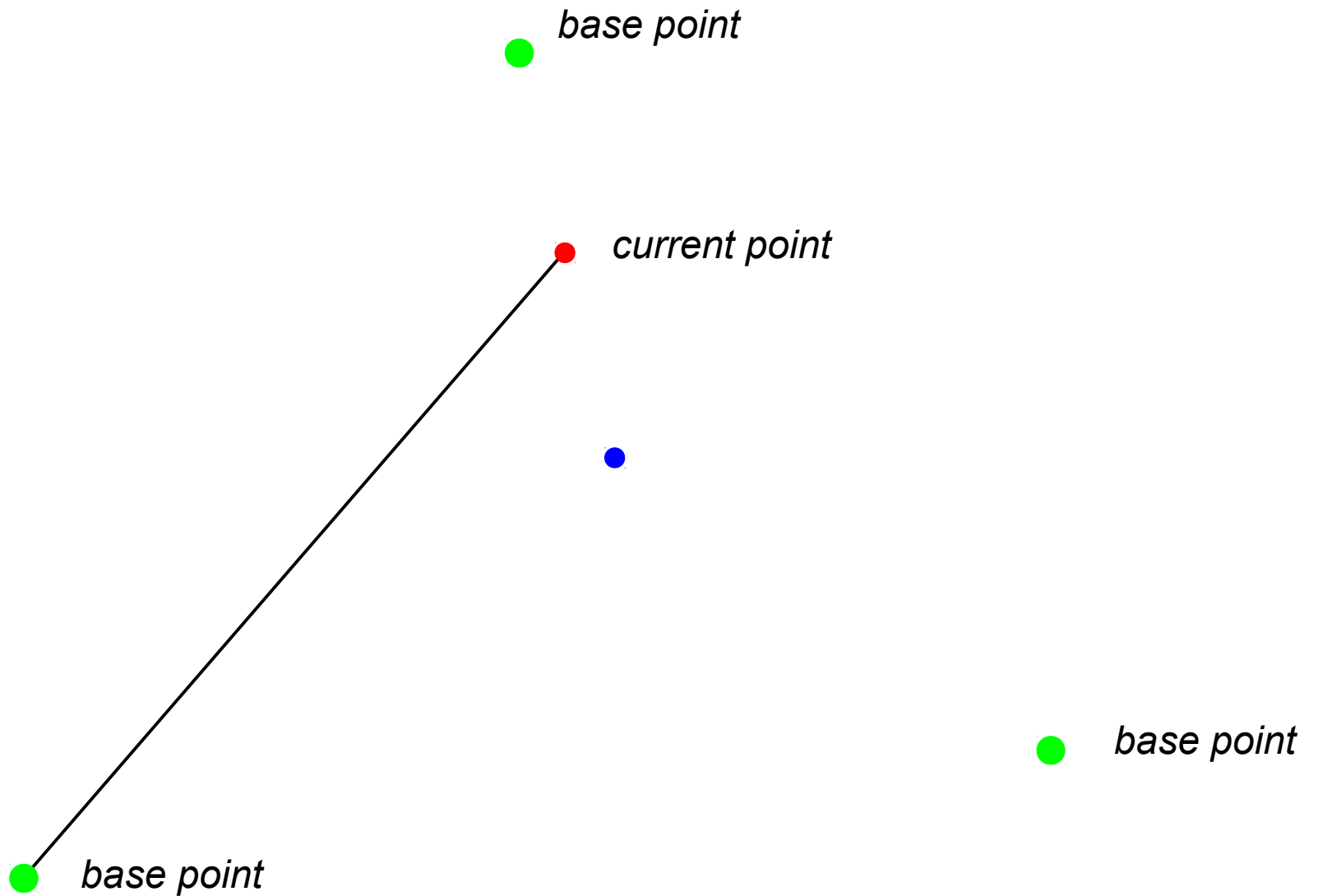
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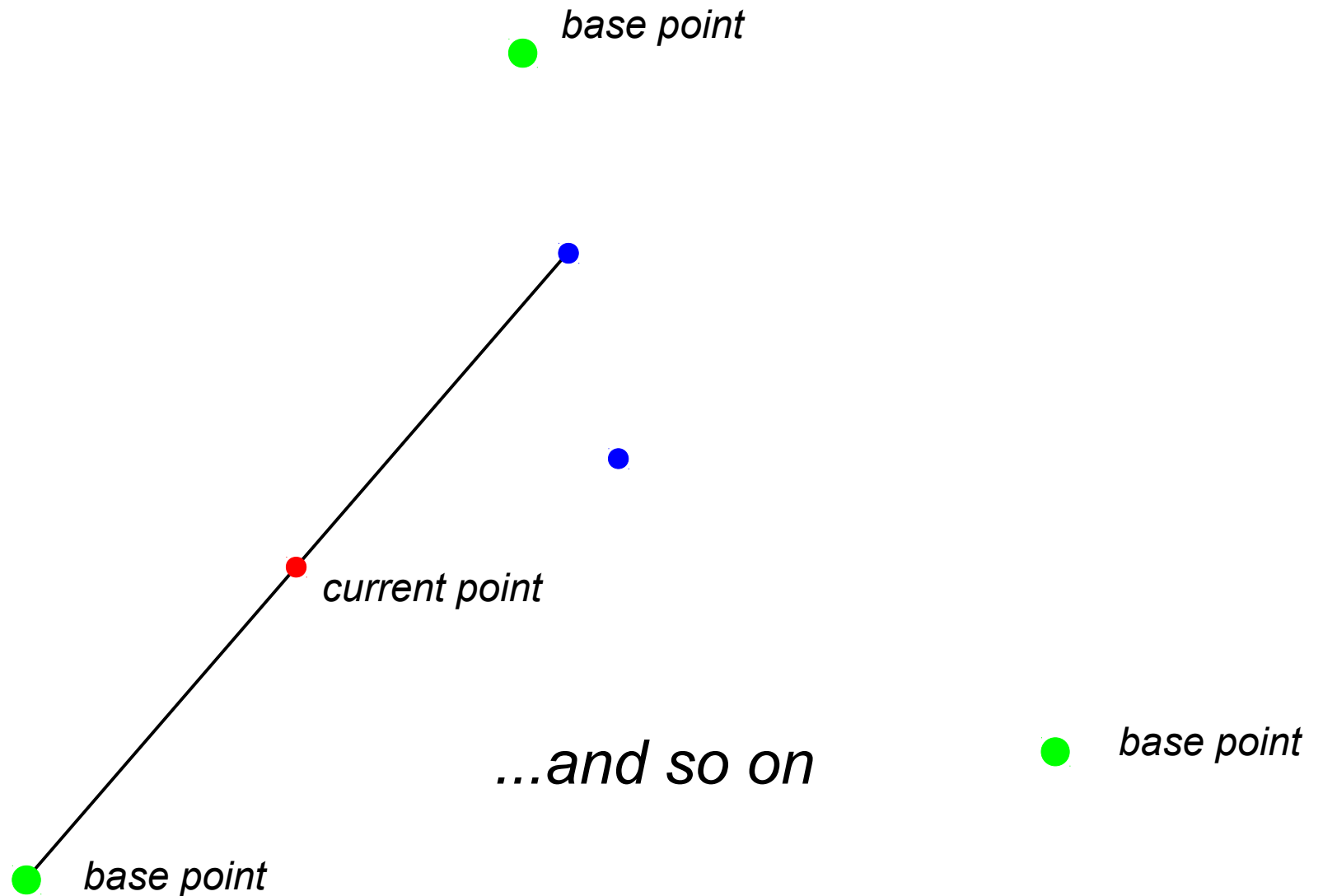
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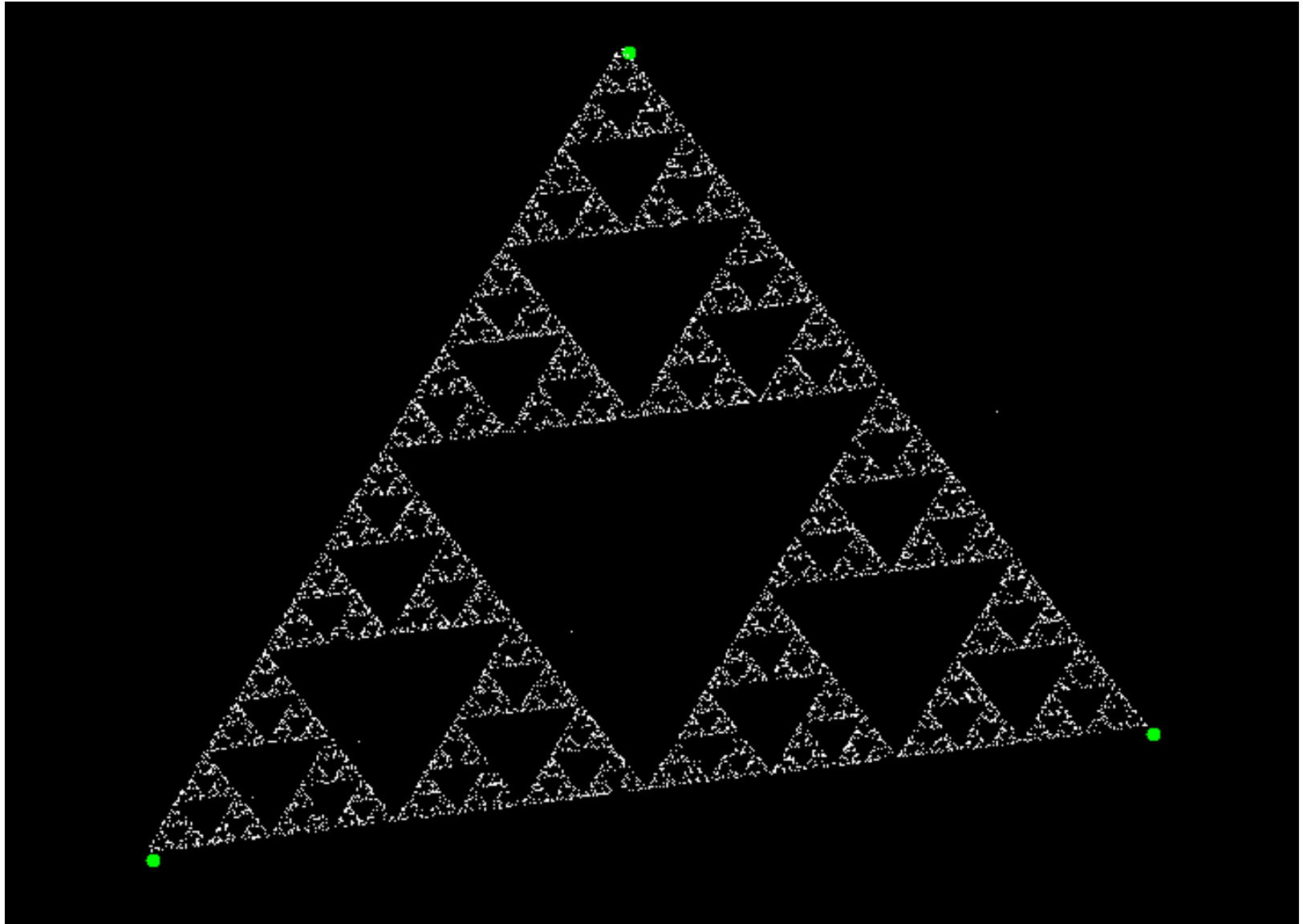
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Stochastic Fractals

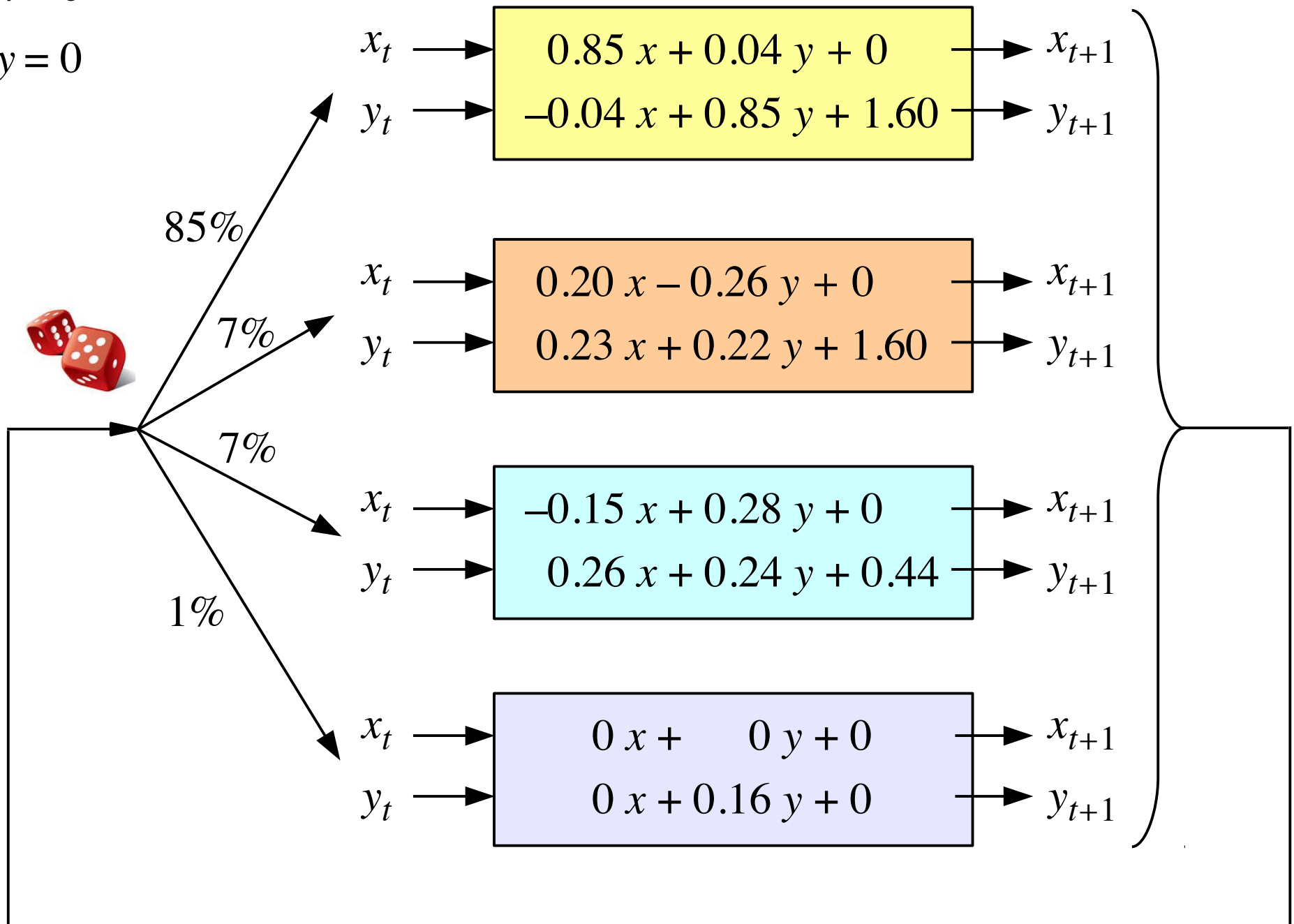
- The Chaos Game



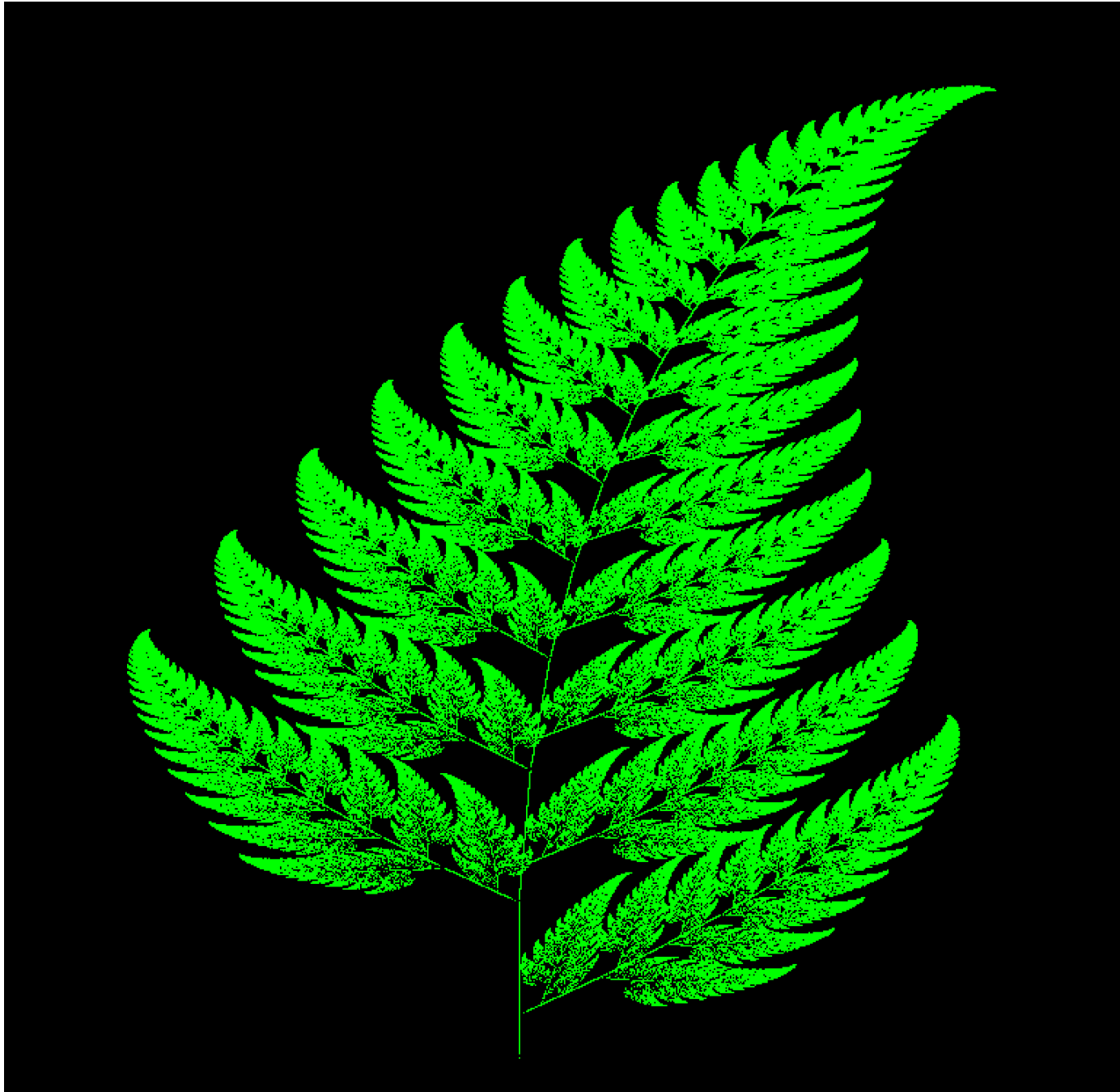
Iterated Function Systems

$$x = 0$$

$$y = 0$$



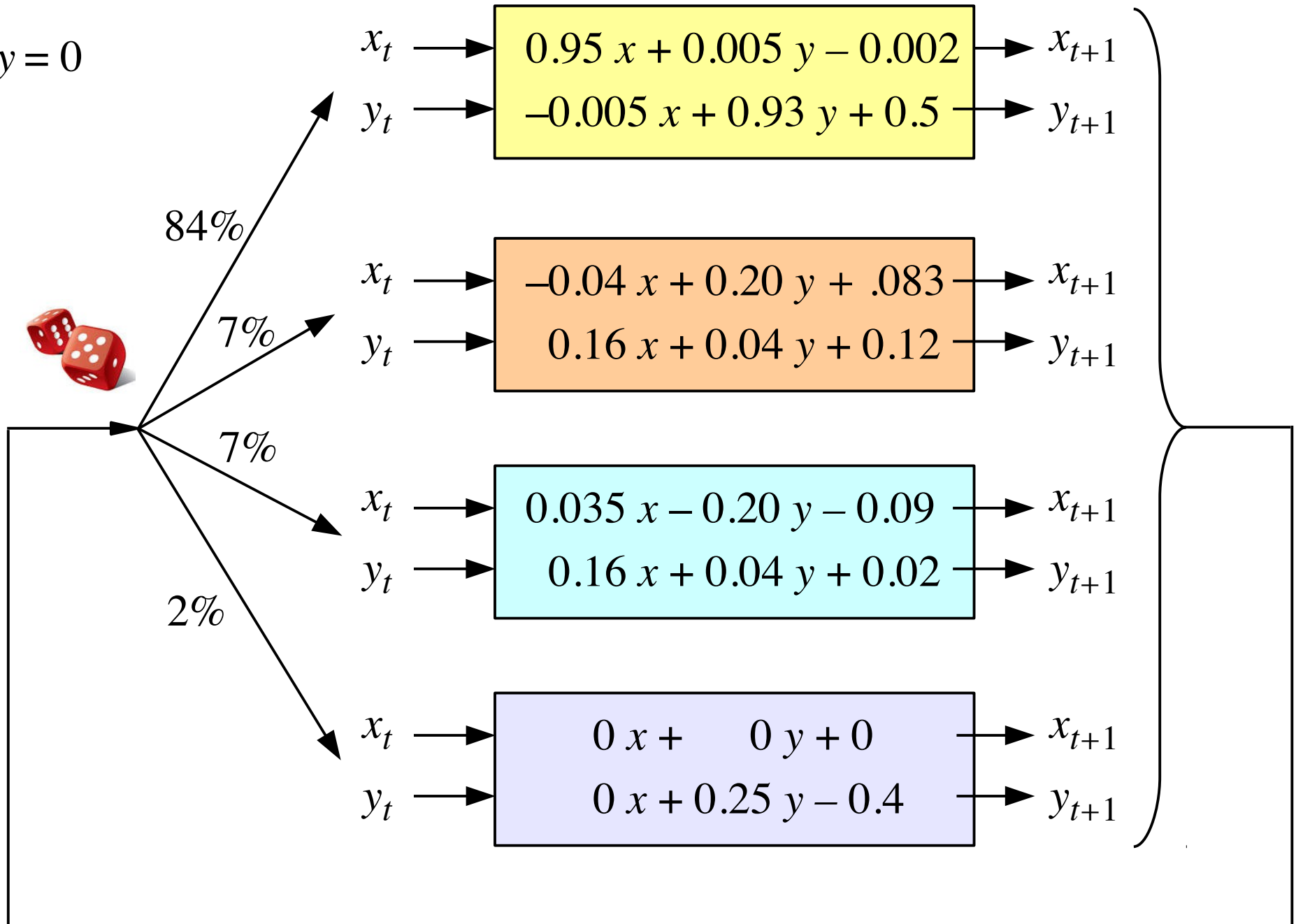
Iterated Function Systems



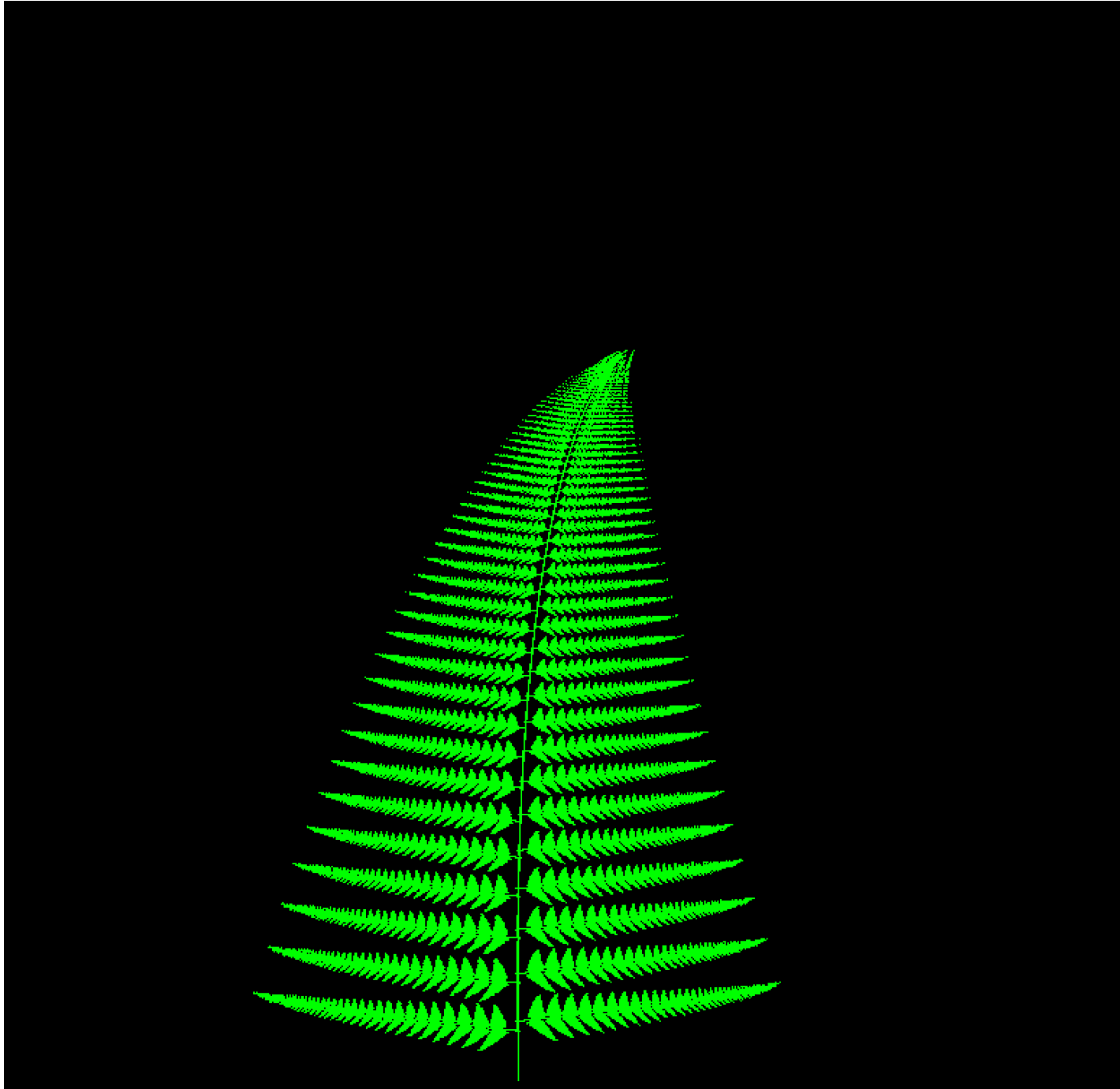
Iterated Function Systems

$$x = 0$$

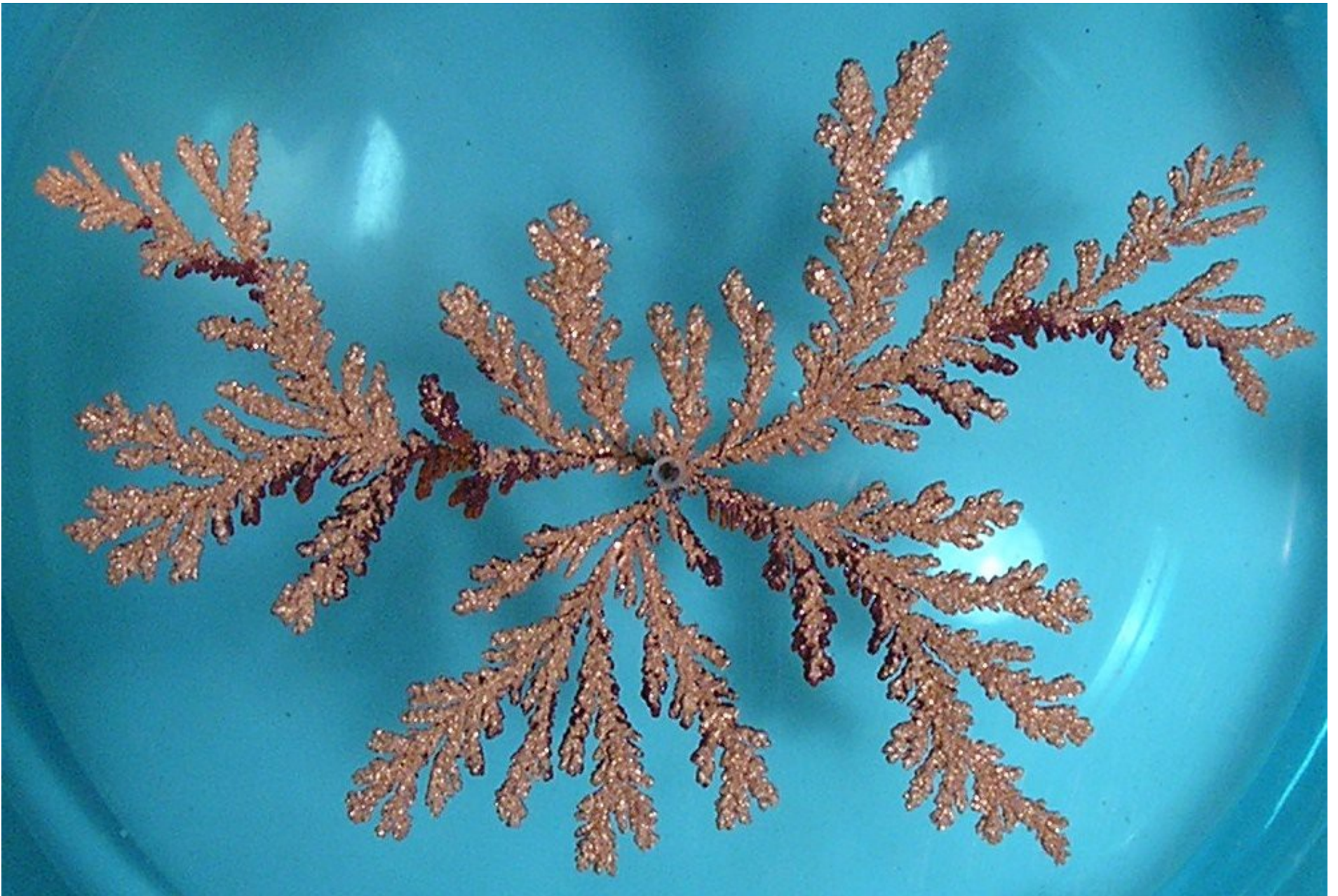
$$y = 0$$



Iterated Function Systems



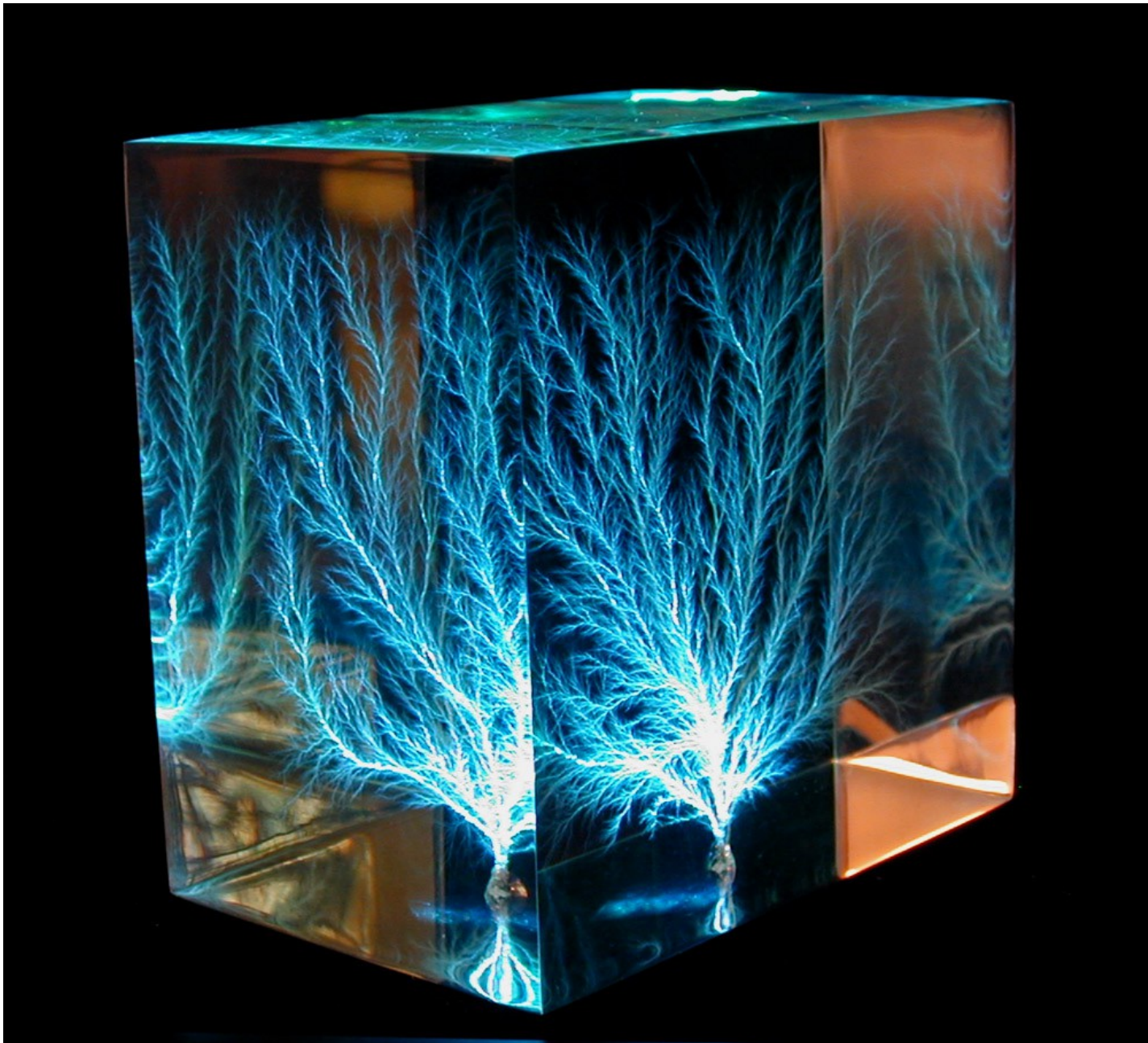
Natural Fractals



Natural Fractals



Natural Fractals



William George Armstrong (1899)



Plate I.

POSITIVE DISCHARGE FROM A WIRE.

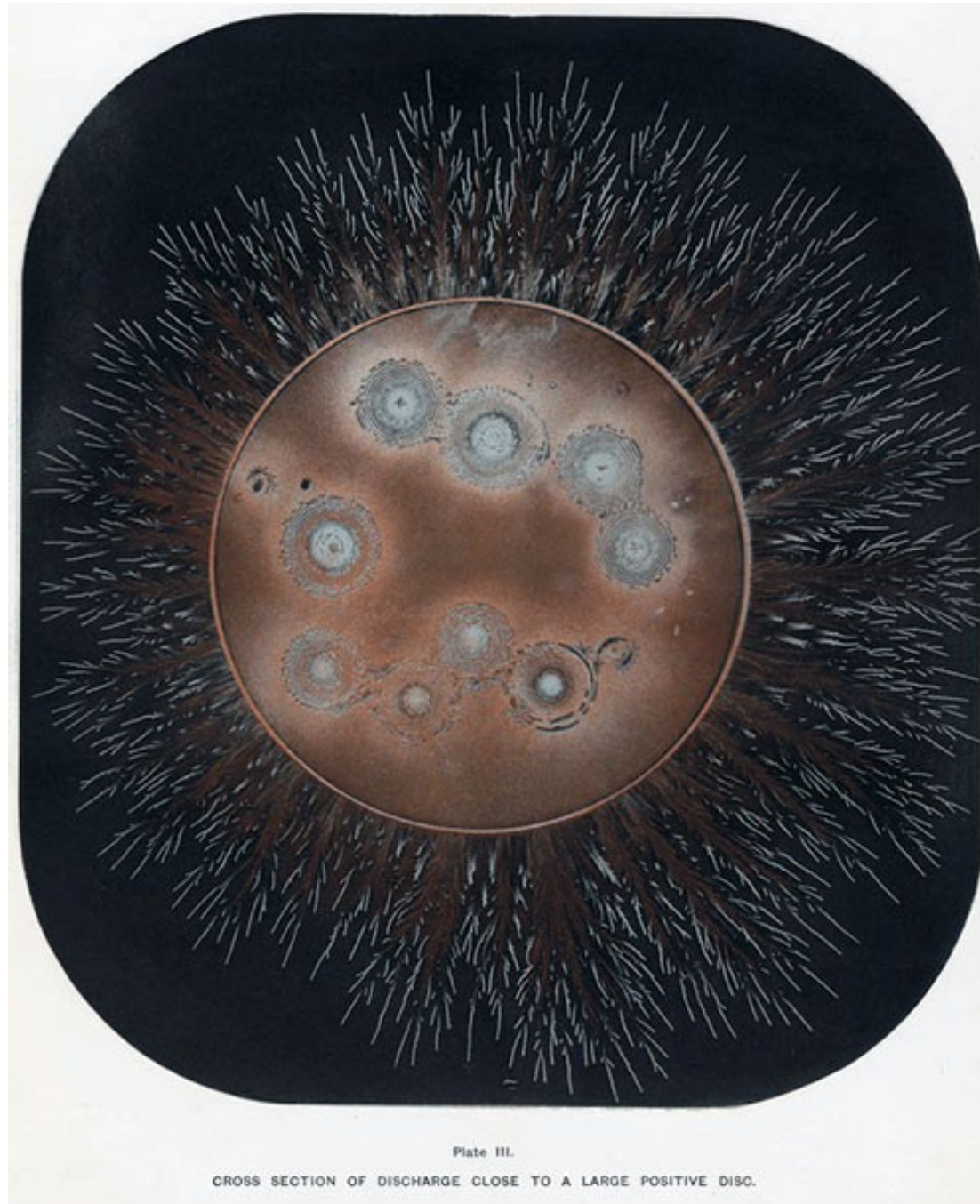
William George Armstrong (1899)



William George Armstrong (1899)



William George Armstrong (1899)



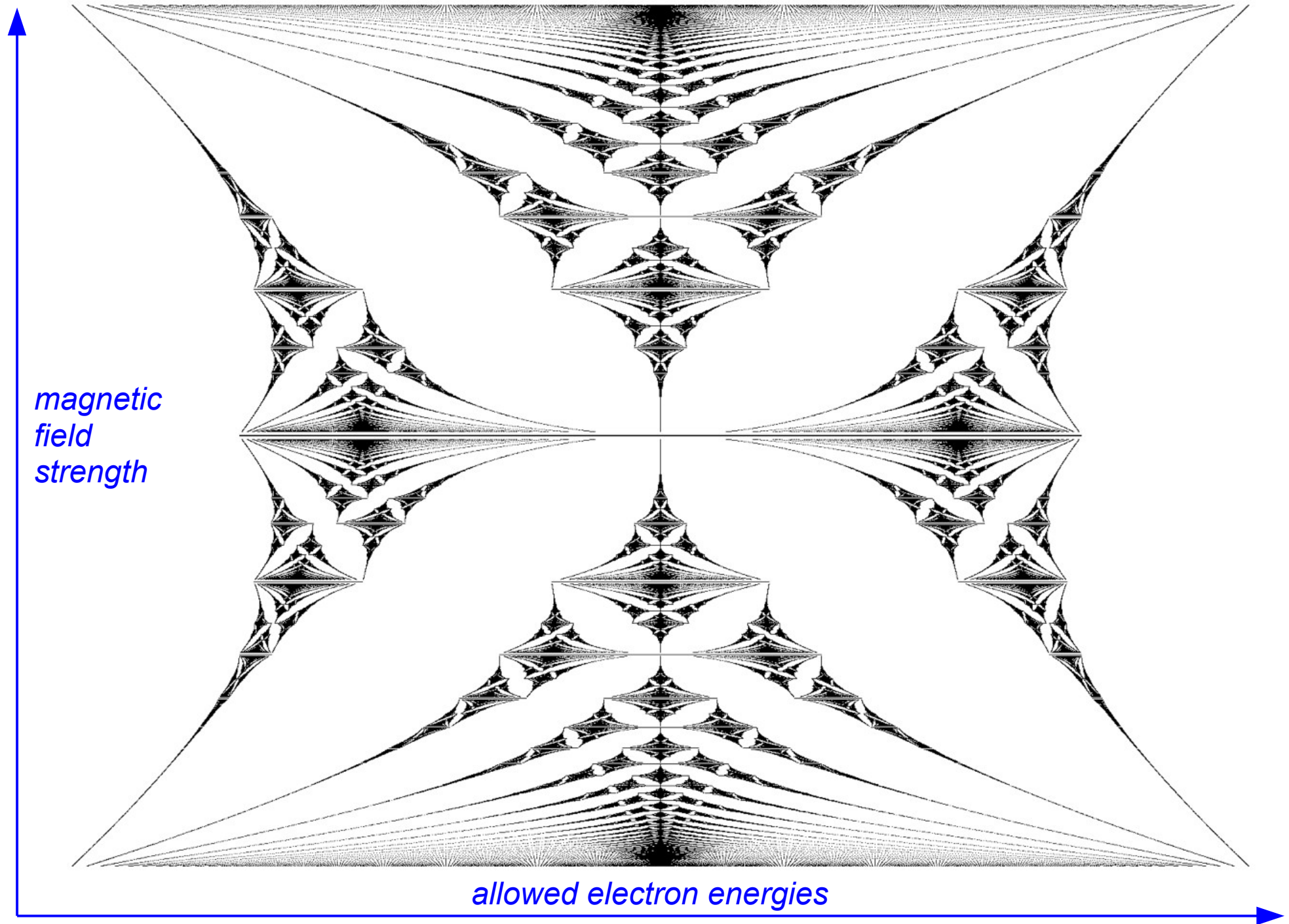
Hofstadter's Butterfly (1976)

*What are the allowed
energies of electrons
in a crystal in a magnetic
field?*

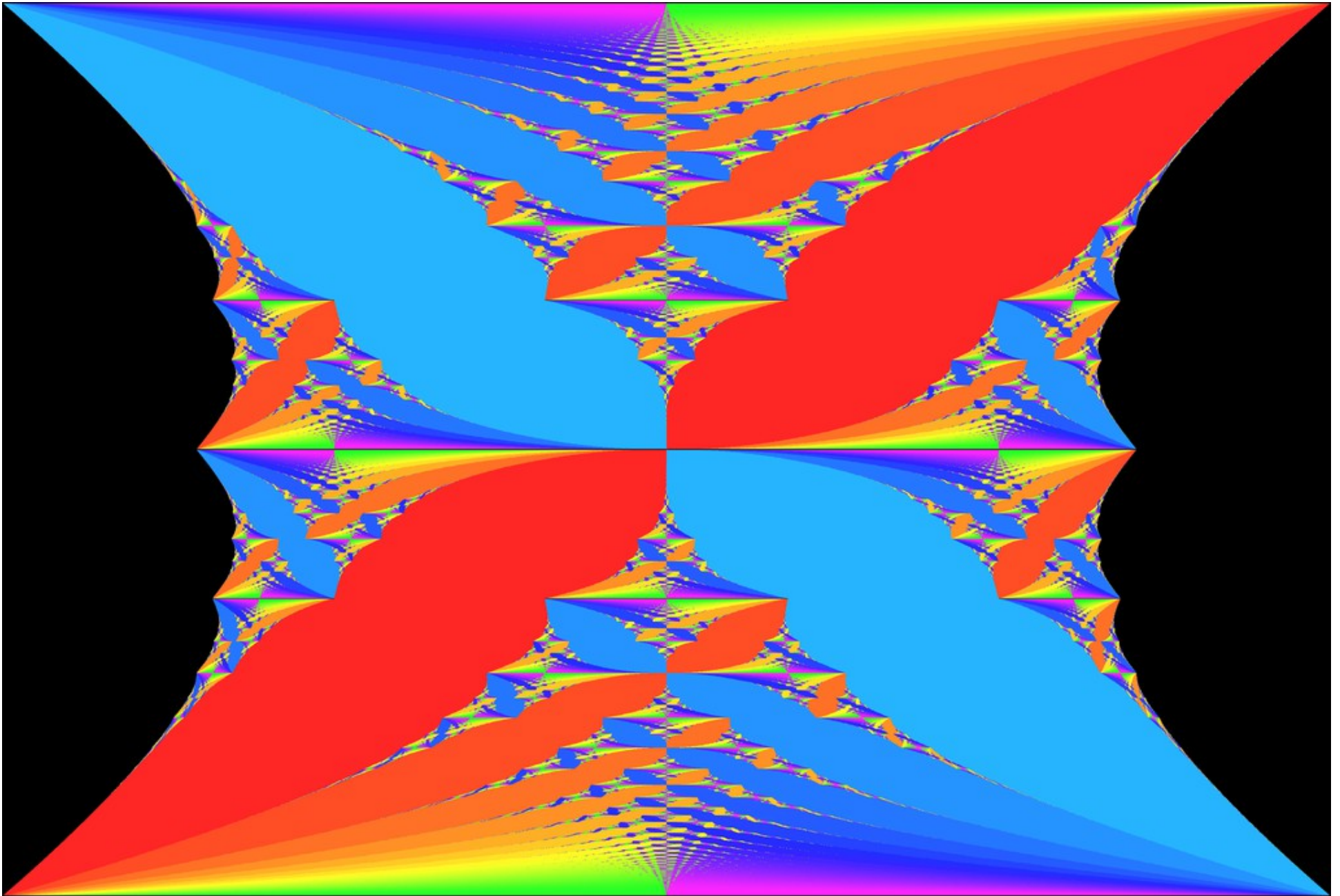
*magnetic
field
strength*

allowed electron energies

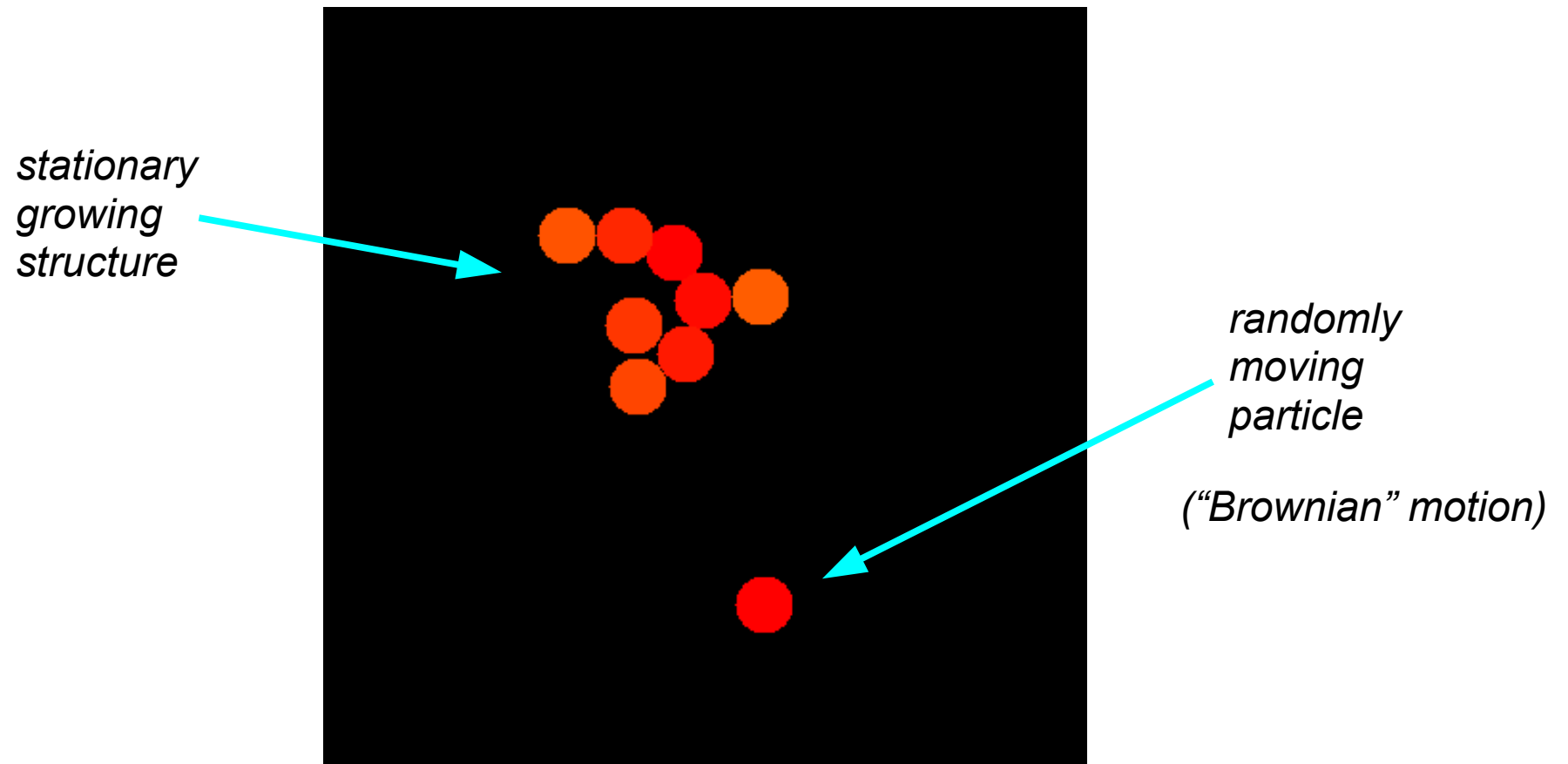
Hofstadter's Butterfly (1976 theory)



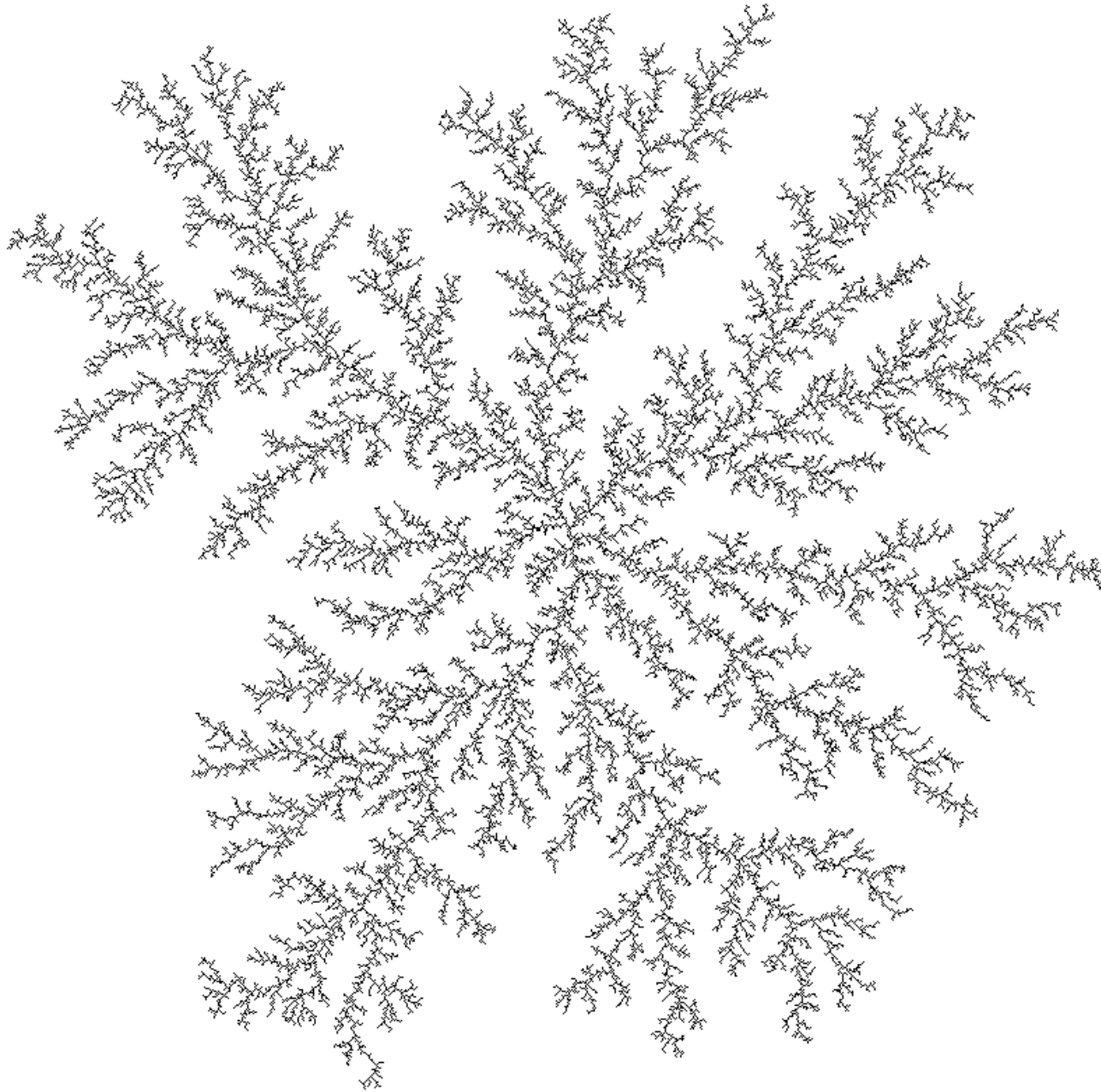
Hofstadter's Butterfly (2013 data)



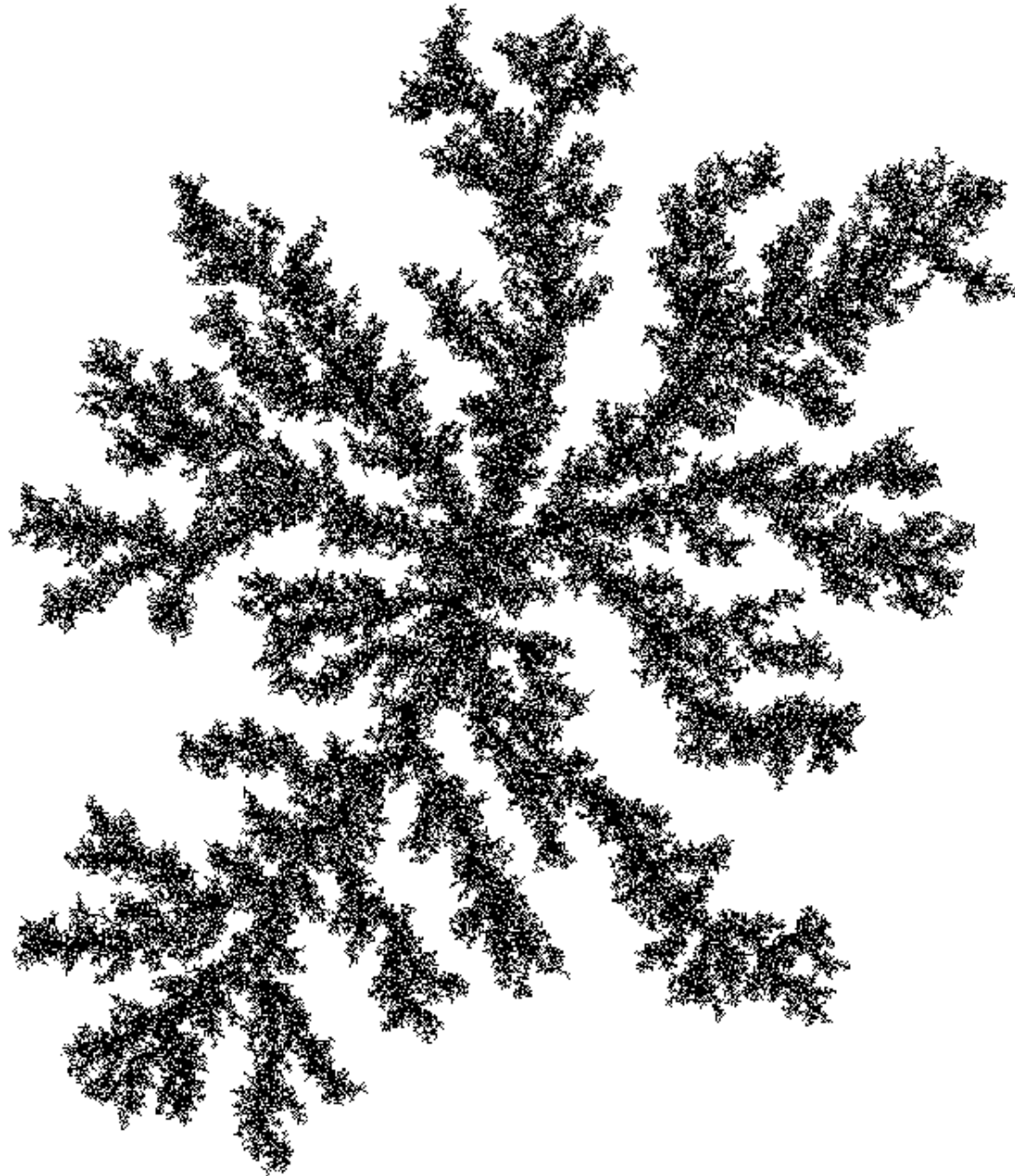
Diffusion Limited Aggregation



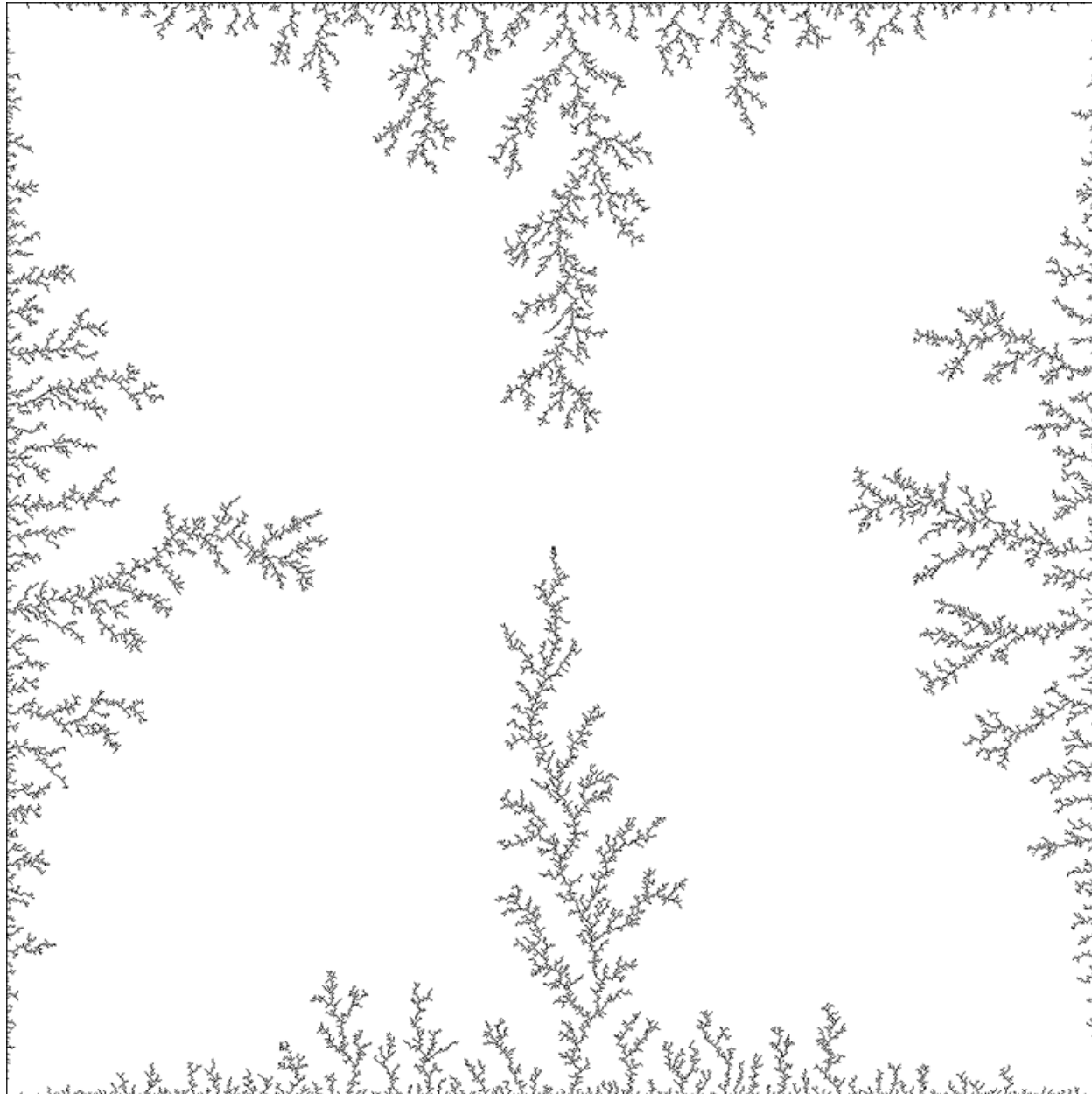
Diffusion Limited Aggregation



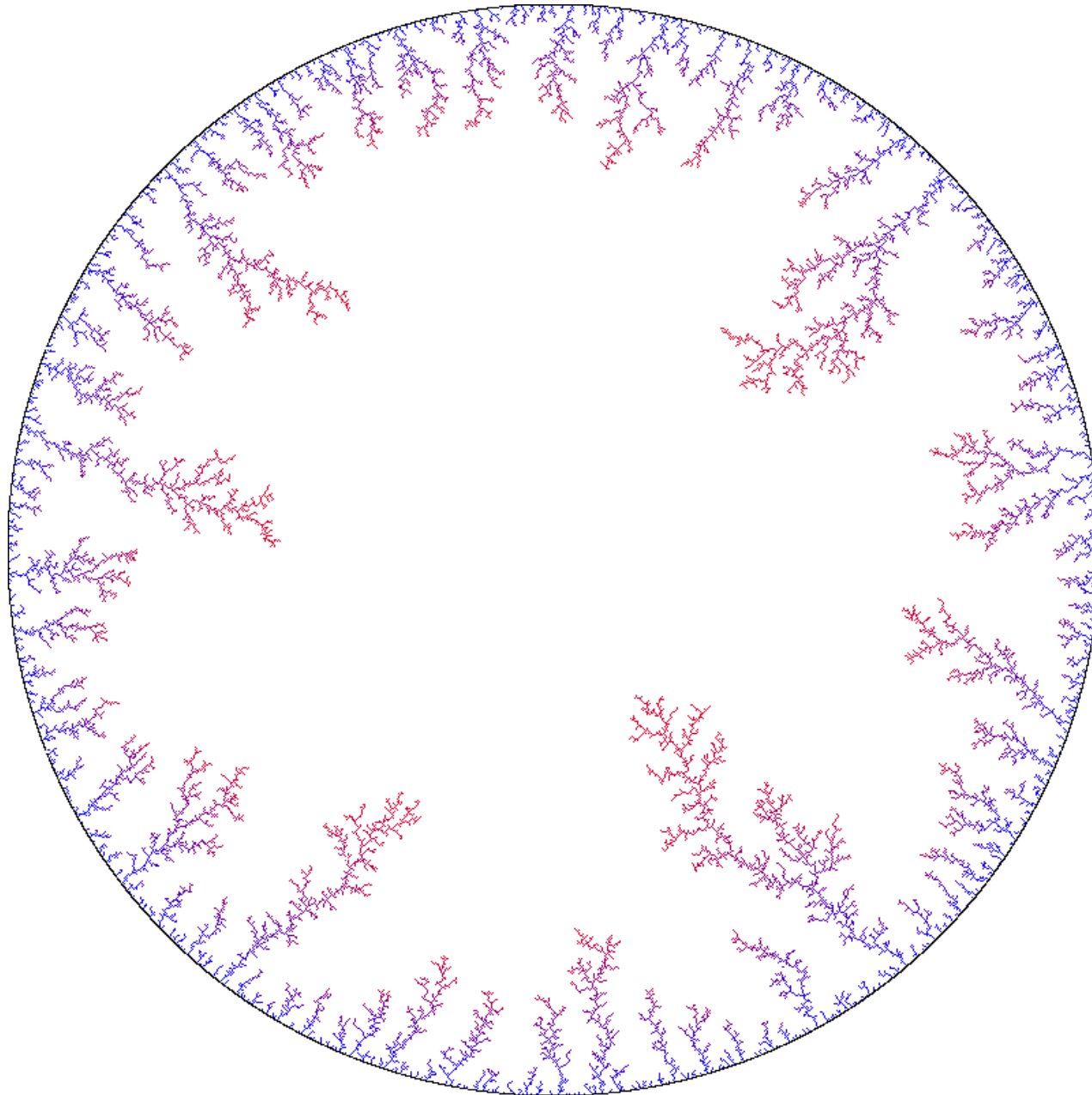
Diffusion Limited Aggregation



Diffusion Limited Aggregation



Diffusion Limited Aggregation



Further Information and Images

- William George Armstrong's electrical discharge experiments
<https://www.dataisnature.com/?p=2081>
- Diffusion Limited Aggregation images by Paul Bourke
<http://paulbourke.net/fractals/dla>
- Andy Lomas' aggregation images and videos
<http://www.andylomas.com/index.html>