

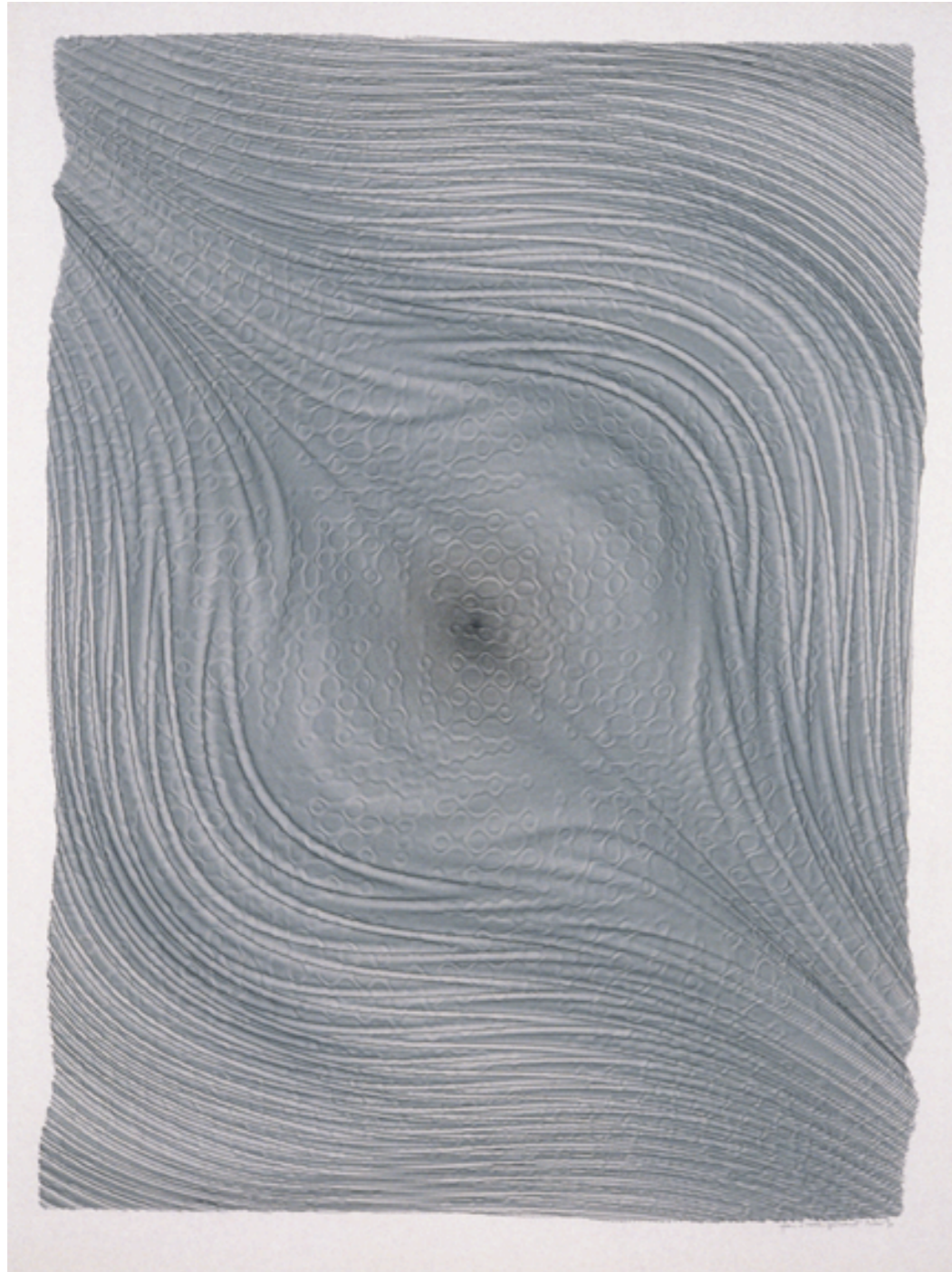
physics and art, art and physics

KITP, june 18 2004

who am I

my name is jean-pierre hébert
art from algorithms from the 70's on
<http://jeanpierrehebert.com/>
<http://dam.org/hebert/>
hebert@kitp.ucsb.edu

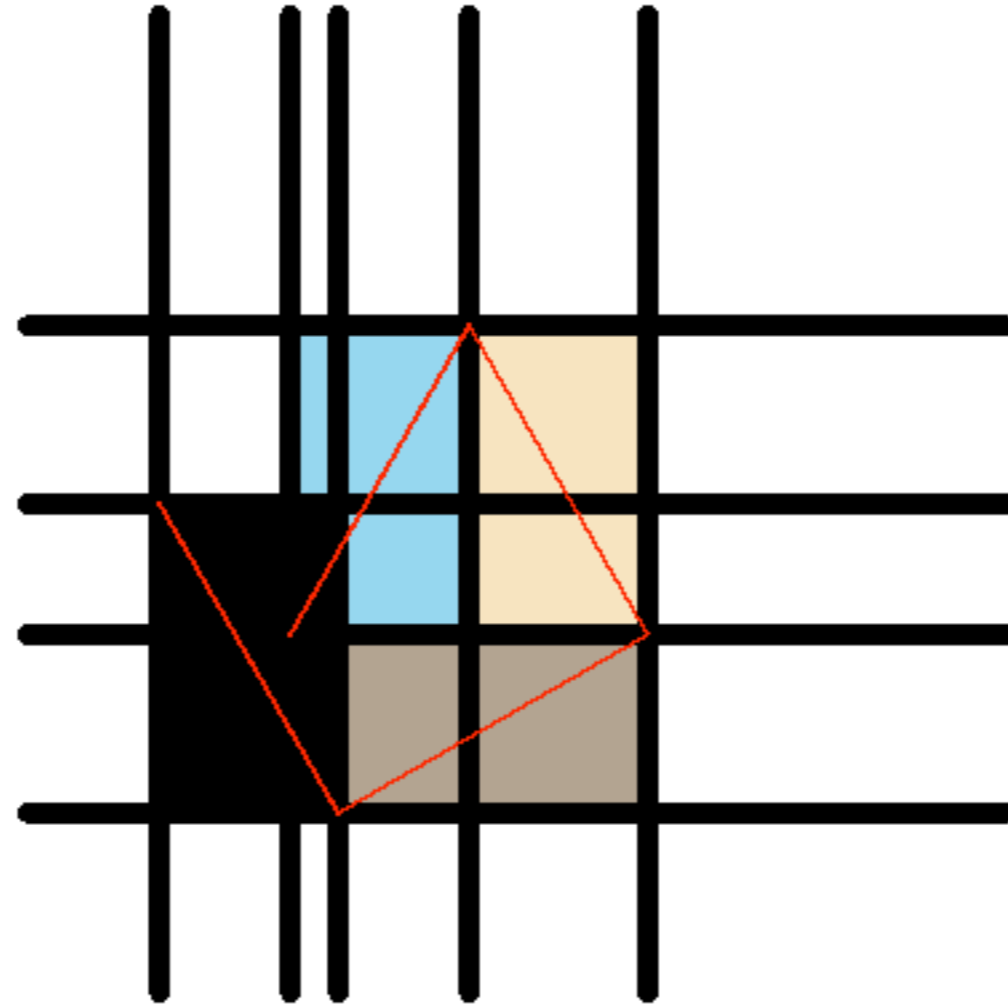
artist in residence at the Kavli Institute for
Theoretical Physics at U.C. Santa Barbara.



Inflationary Bubble 1990
Ink on Paper



Shapes of Silence 2002
Ink on Paper



Meta-Bill-Mondrian 1999
Animation from
One Hundred Views of the Metagon



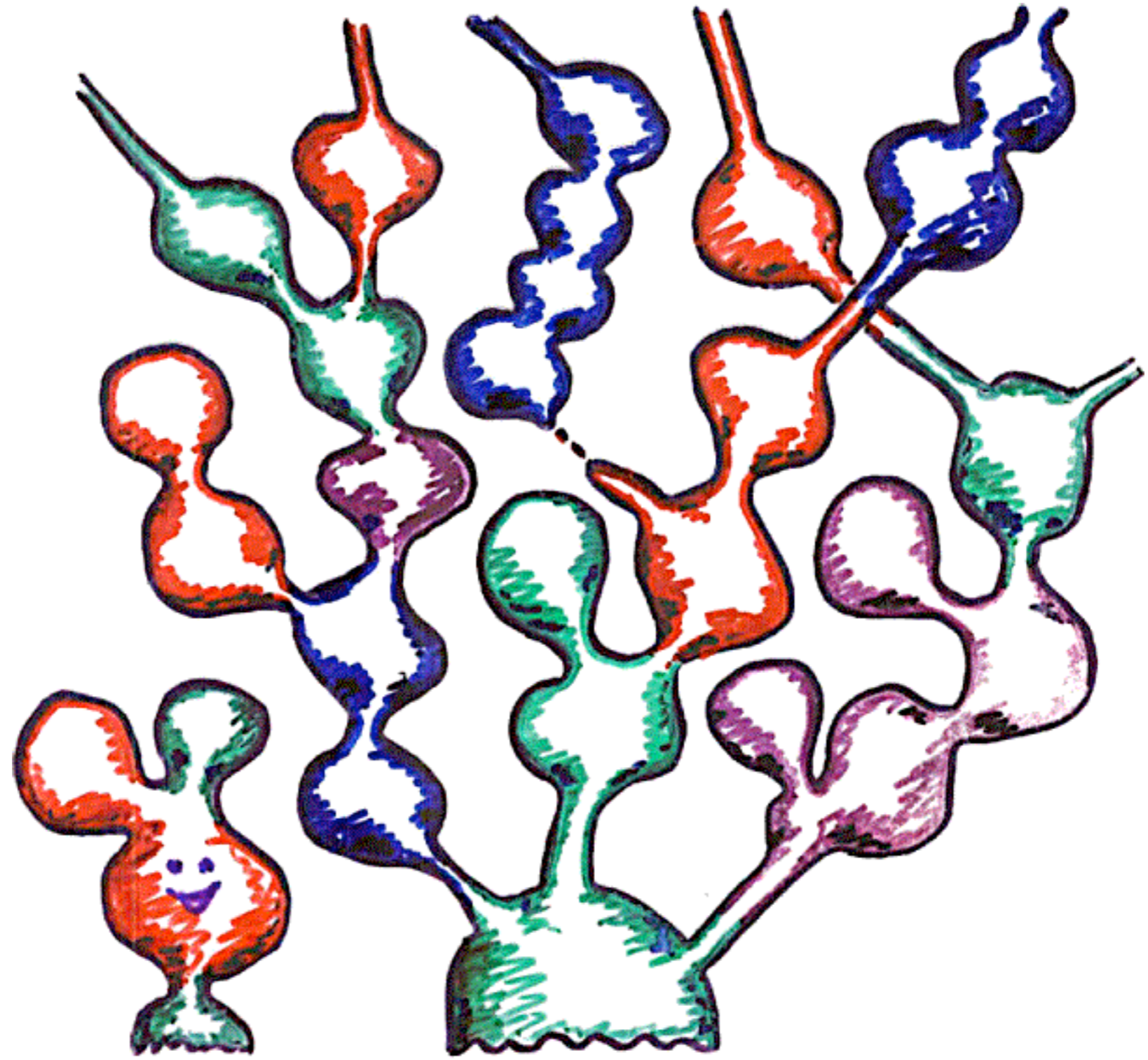
Ulysses 1999-2004
Traces on Sand

a personal selection
from KITP talk slides

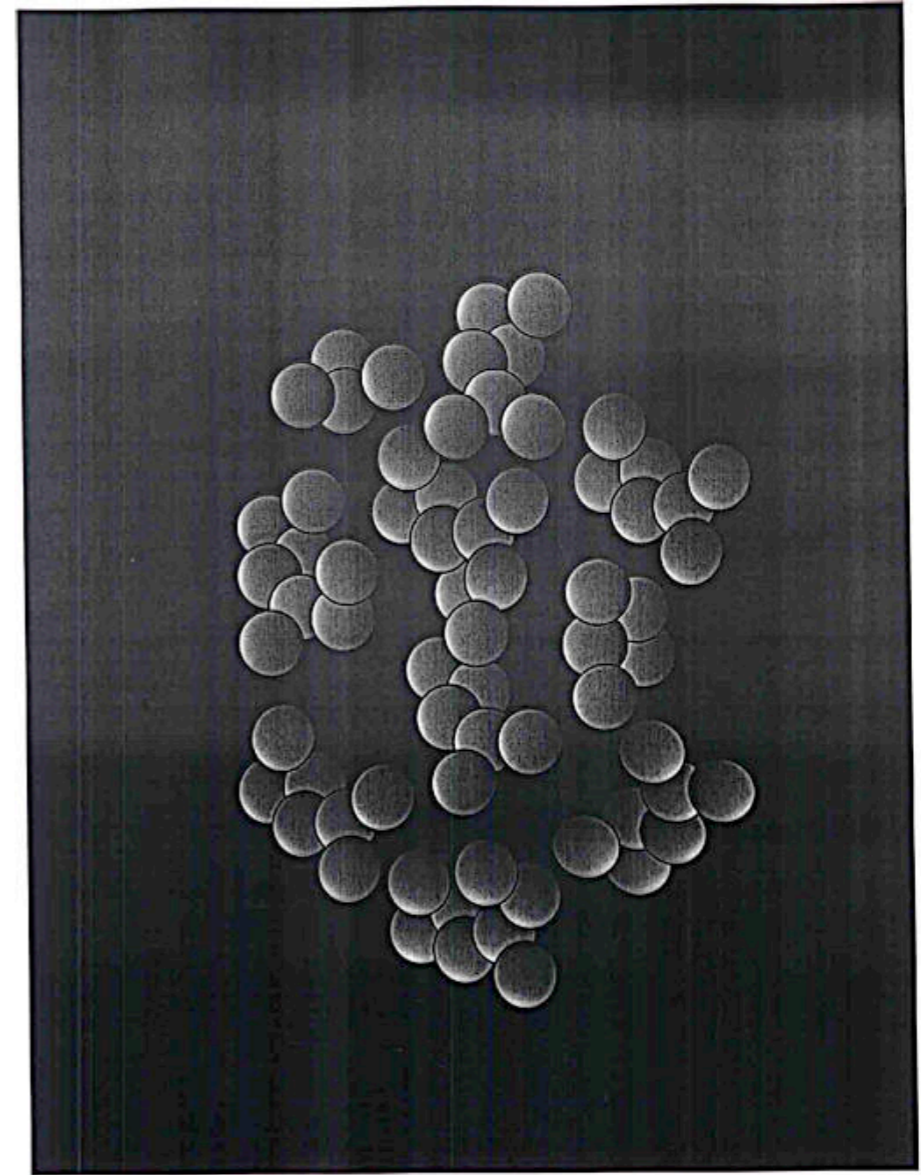
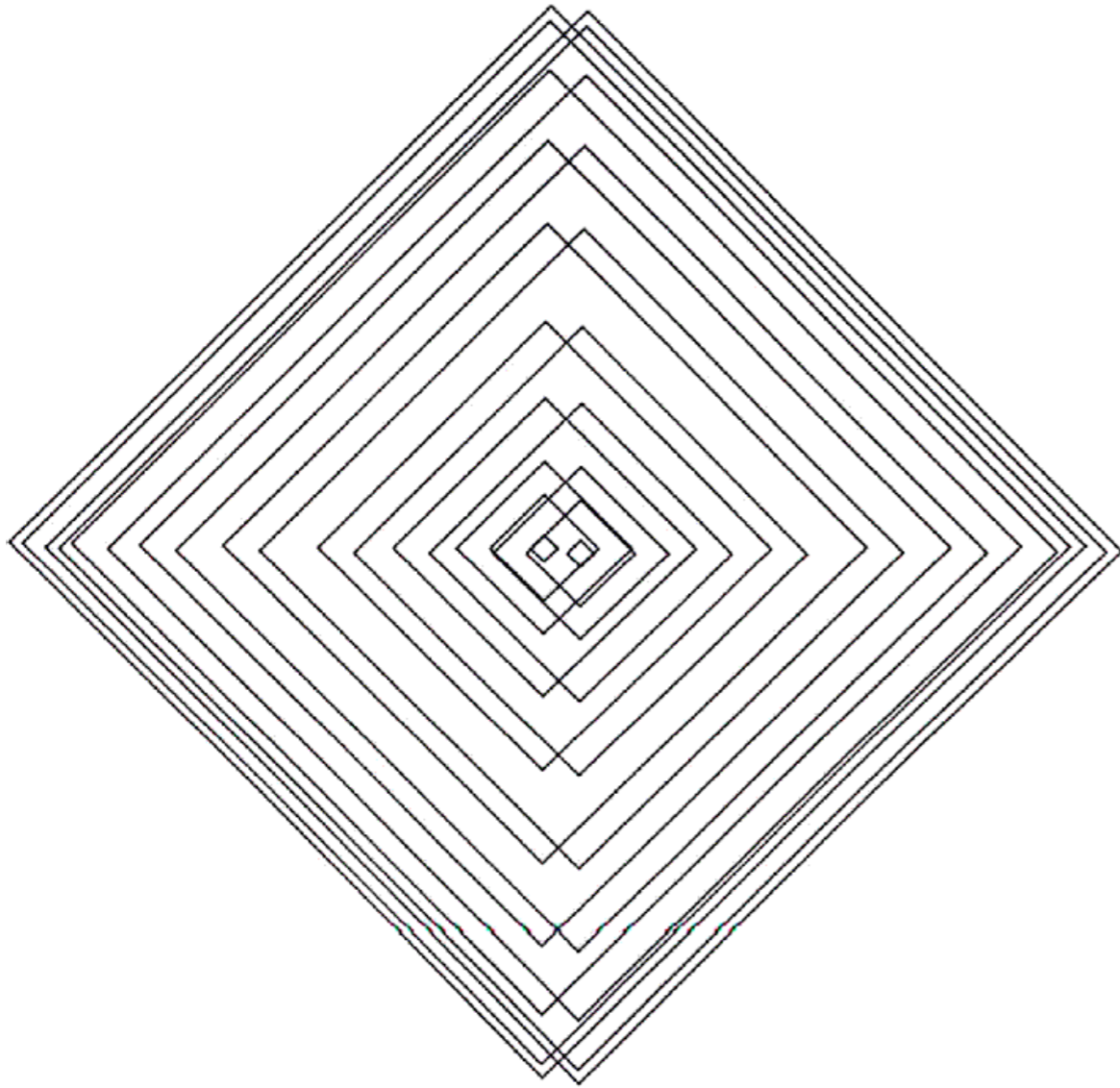


Dr. Andrei Linde, Stanford

Kandinsky Universe

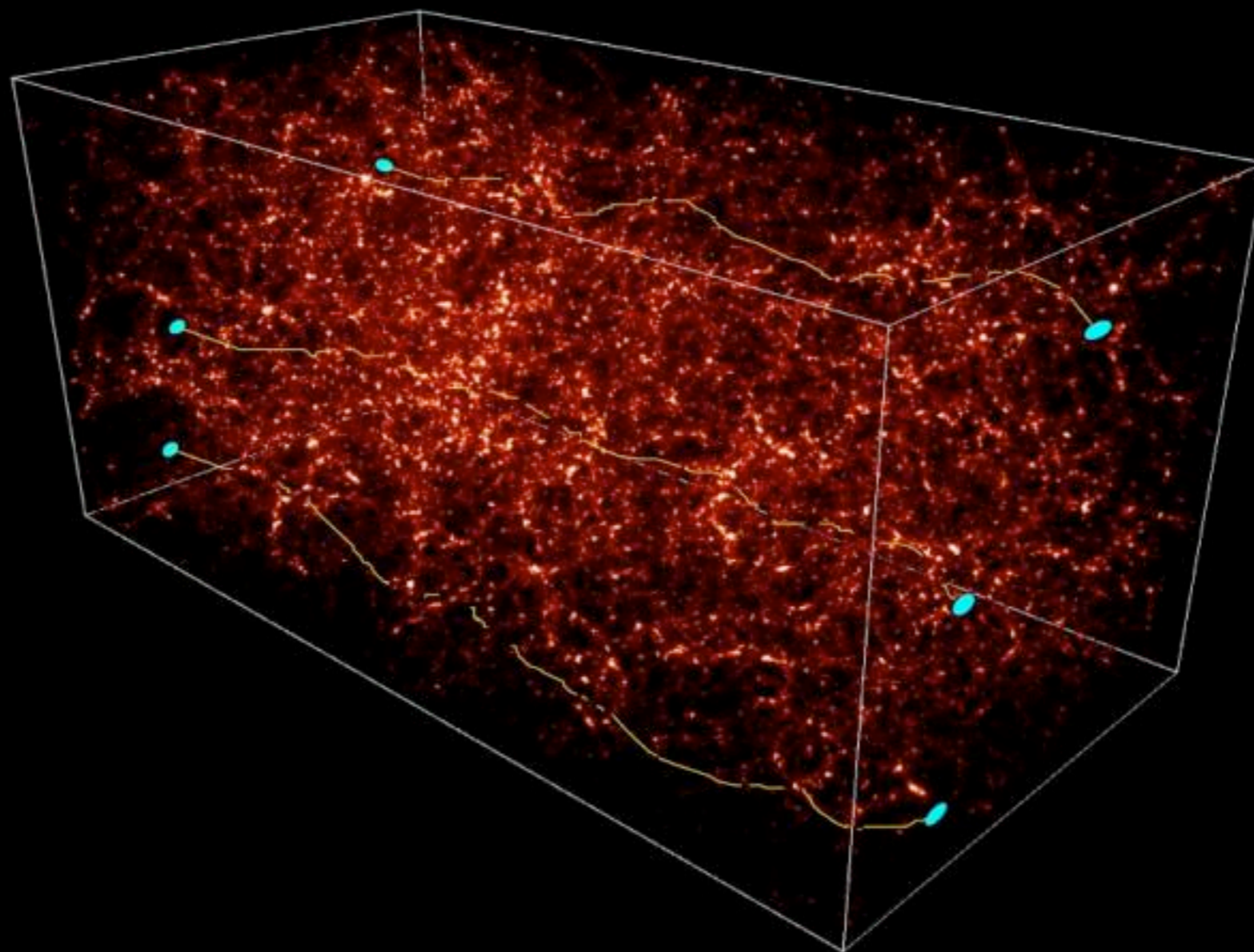


THE UNIVERSE
as it is



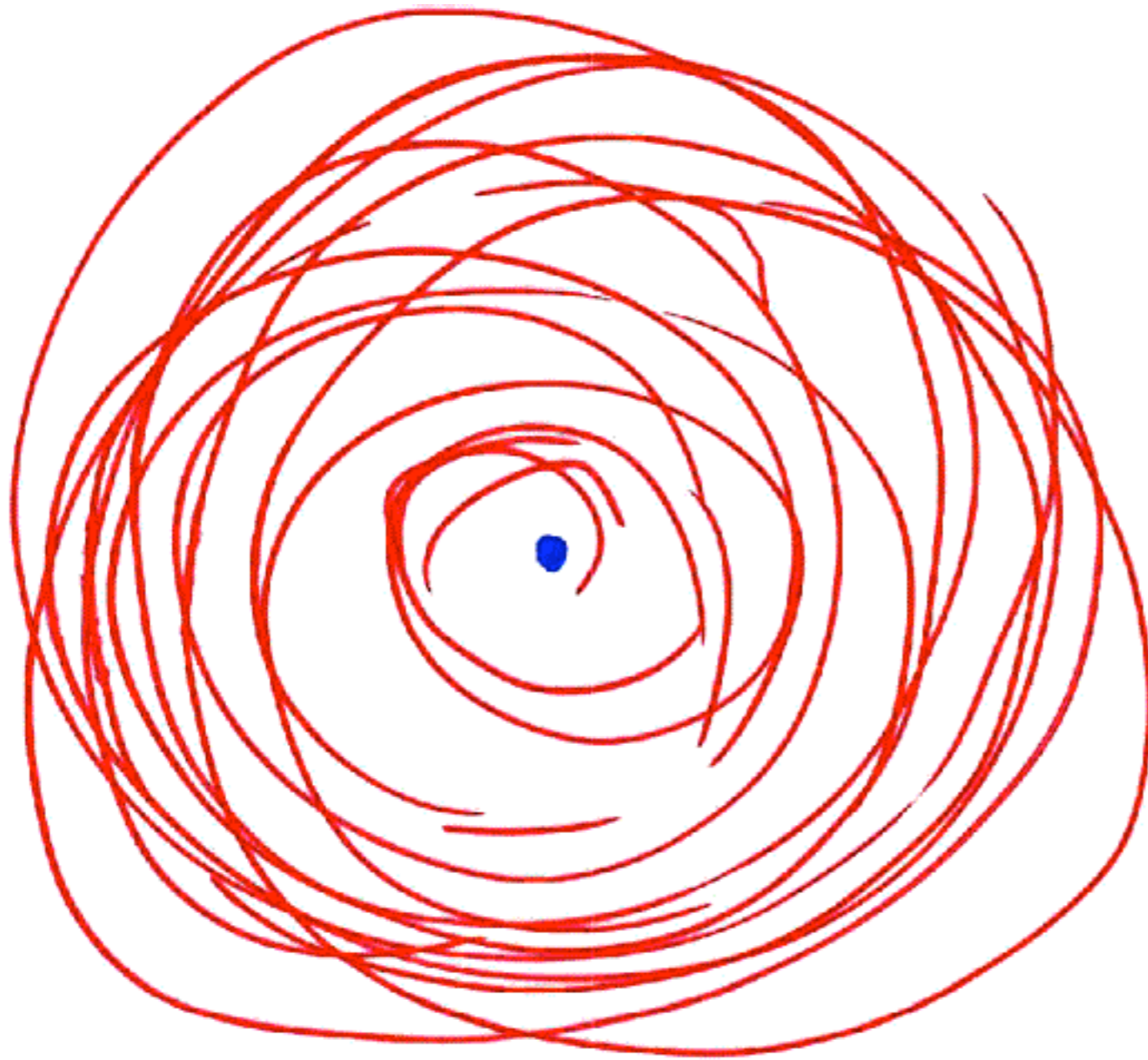
Dr. Tom Banks, UCSC & Rutgers

DEFLECTION OF LIGHT RAYS CROSSING THE UNIVERSE, EMITTED BY DISTANT GALAXIES



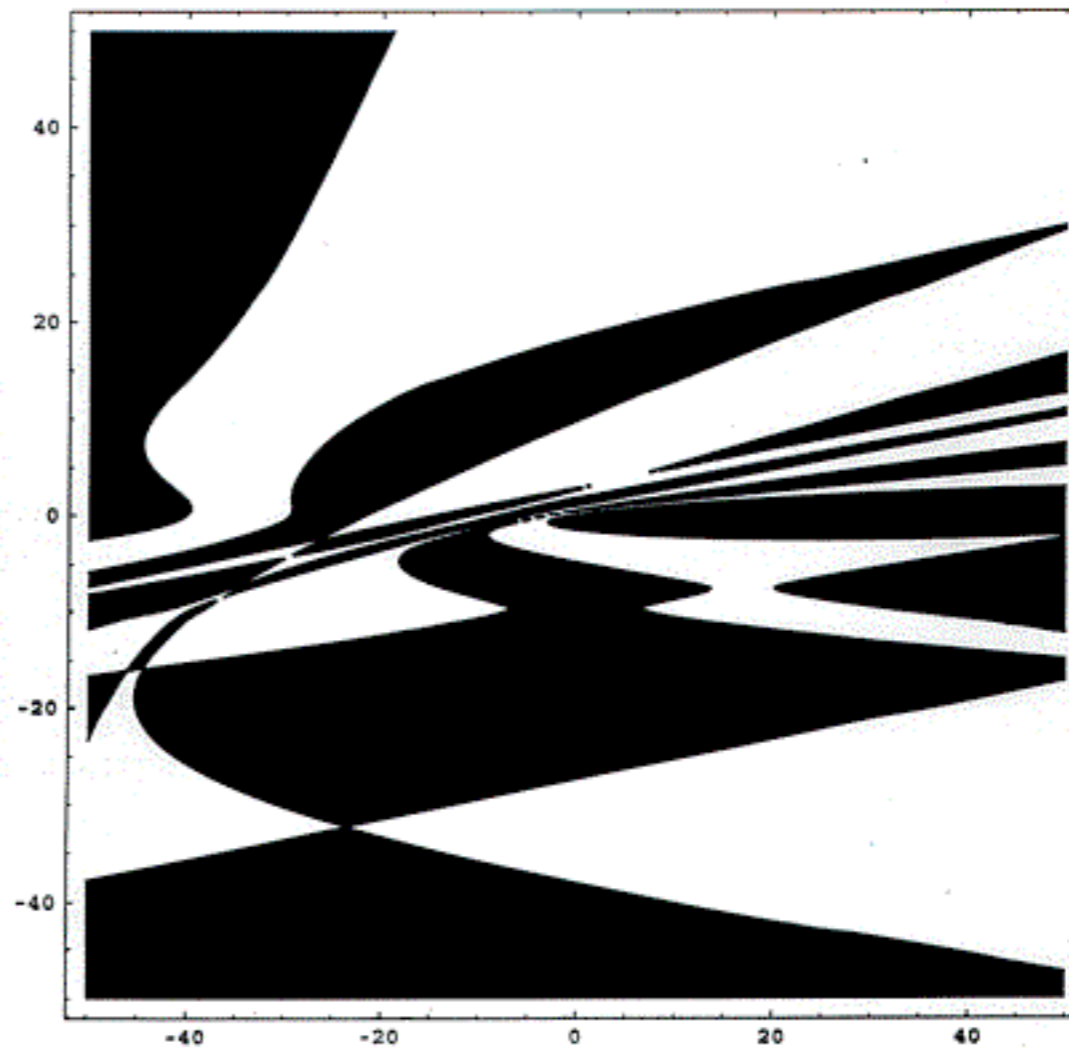
SIMULATION: COURTESY NIC GROUP, S. COLOMBI, IAP.

Dr. S. Colombi



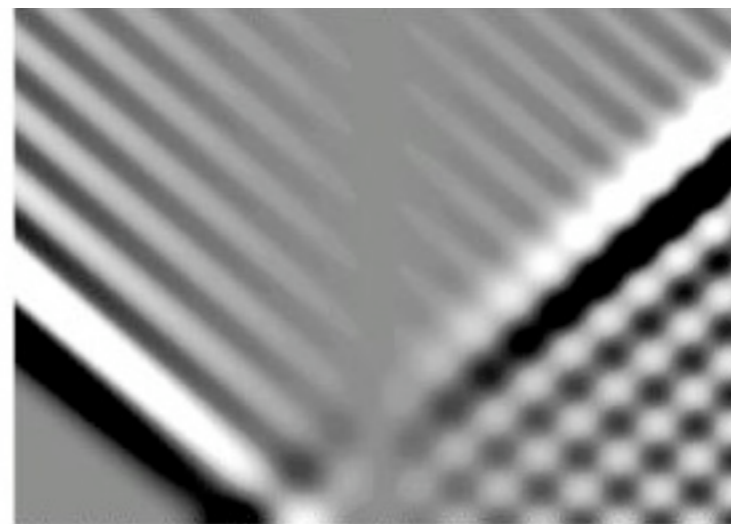
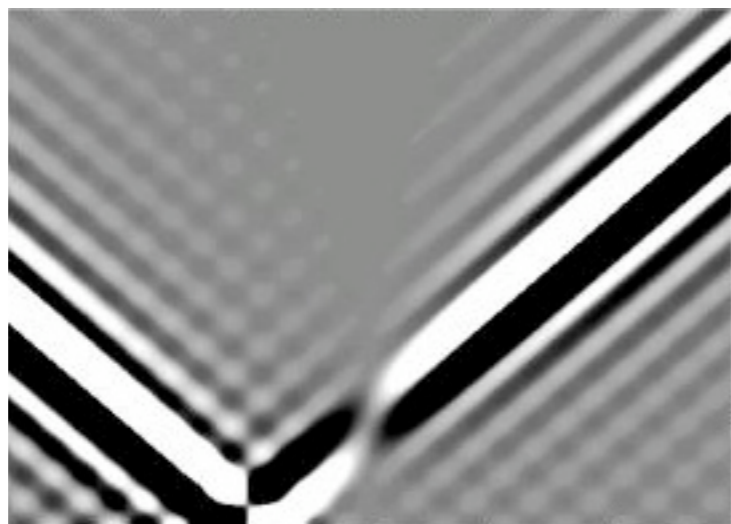
Joseph Polchinski (ITP, UCSB)

Hydrogen

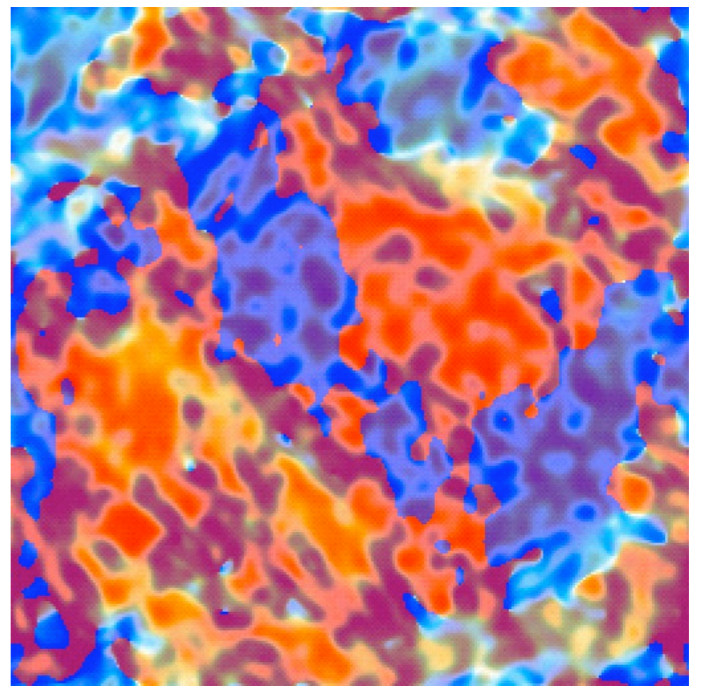
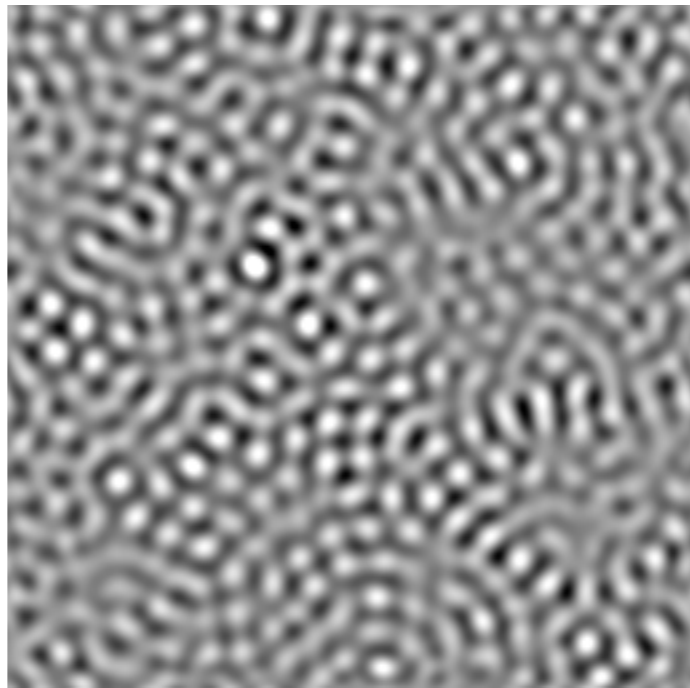
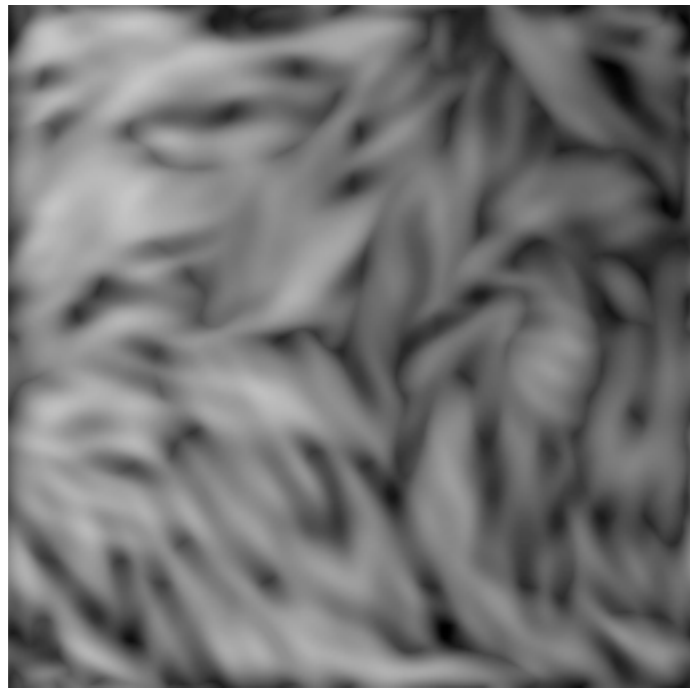
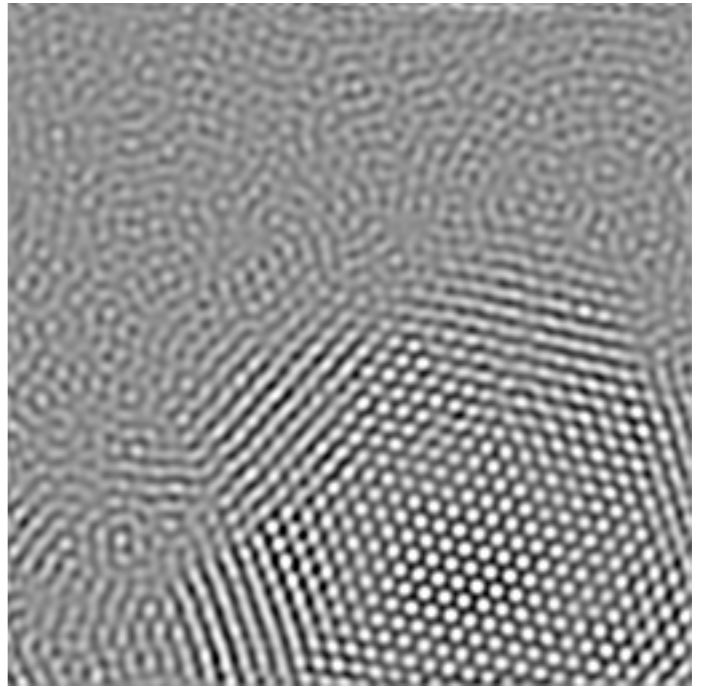
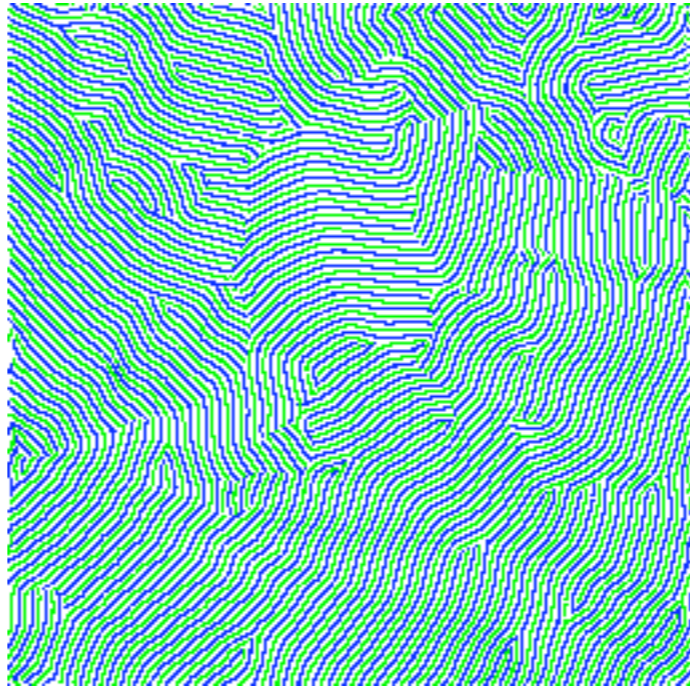
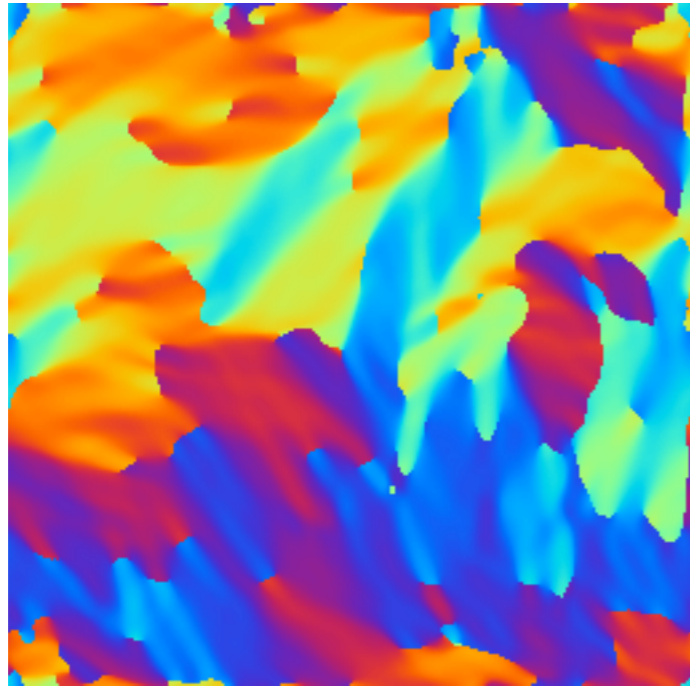


Washington Taylor (MIT)

Sign [det M_{qa}]
(6, 18)
8e

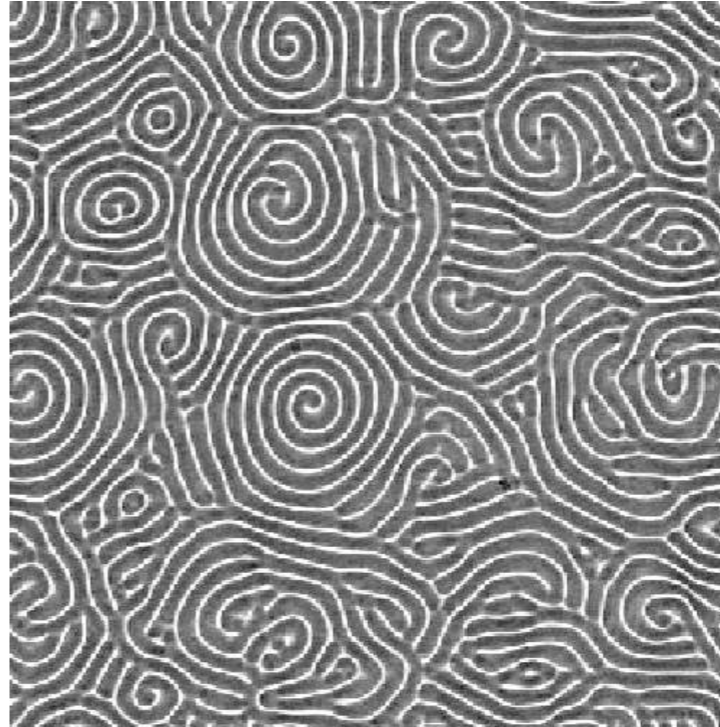
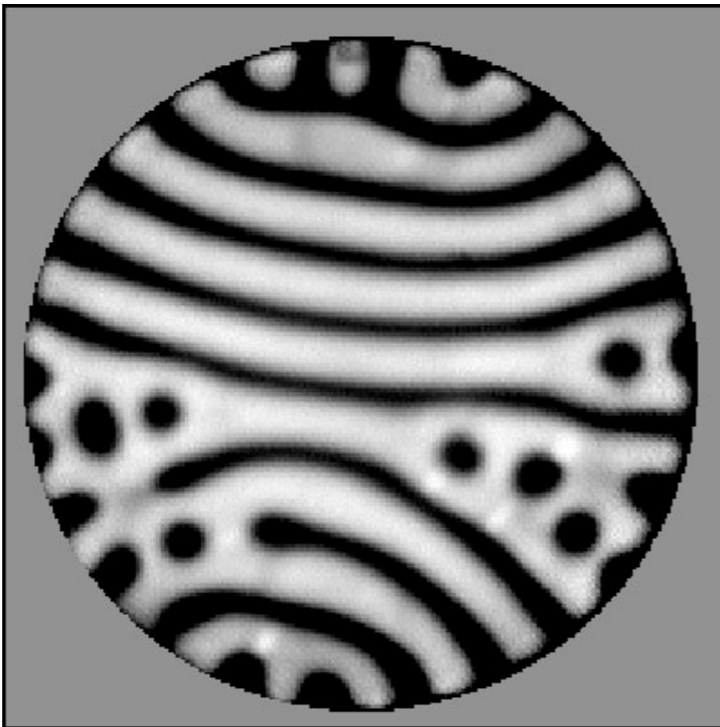
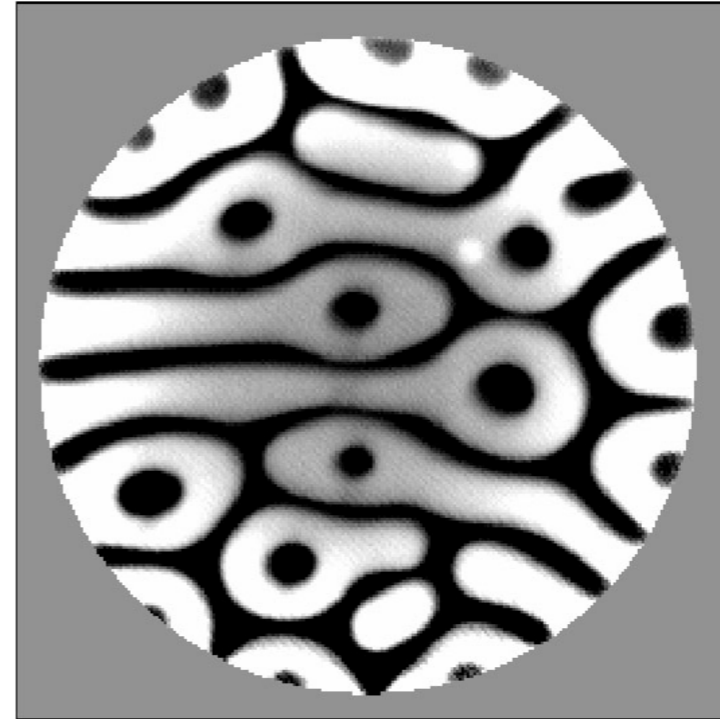
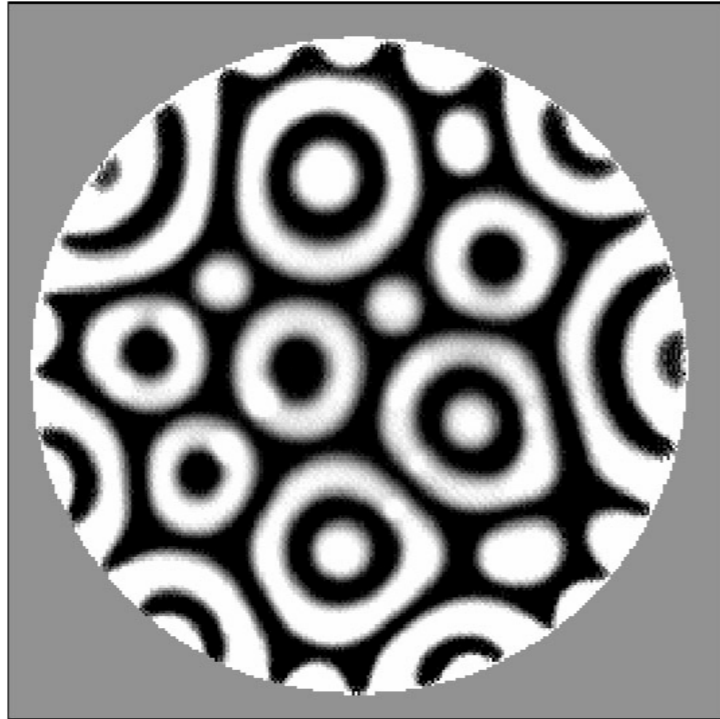


Dr. Amir Yacoby, Weizmann Institute





Dr. Guenter Ahlers (UCSB)



Dr. Guenter Ahlers (UCSB)



Showing, explaining physics

Music: from Chopin's improvisations on the piano to his published music scores.

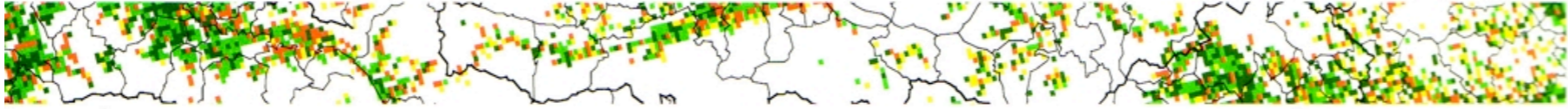
Physics: from blackboard to paper to talk to emergence into science, the public, budgets, implementations.

Maths: from Geometry (Pythagoras) to
Number Theory (Fermat and Wyle), from
Euclides to Riemann, from Descartes to Gödel.

Physics: from Concrete (Archimedes) to
Abstract (Relativity, String Theories), from
three to ten dimensions.



ESCAPING FLATLAND



MICRO / MACRO READINGS



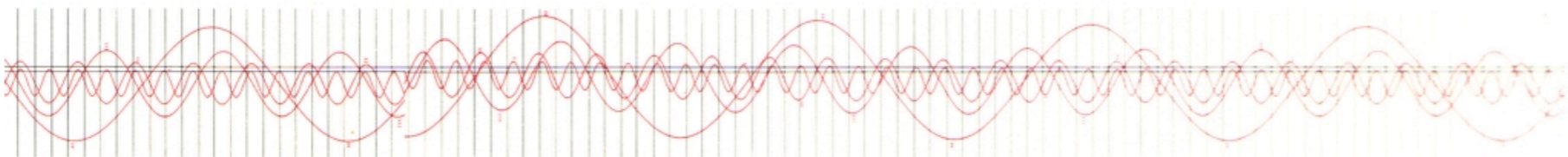
LAYERING AND SEPARATION



SMALL MULTIPLES

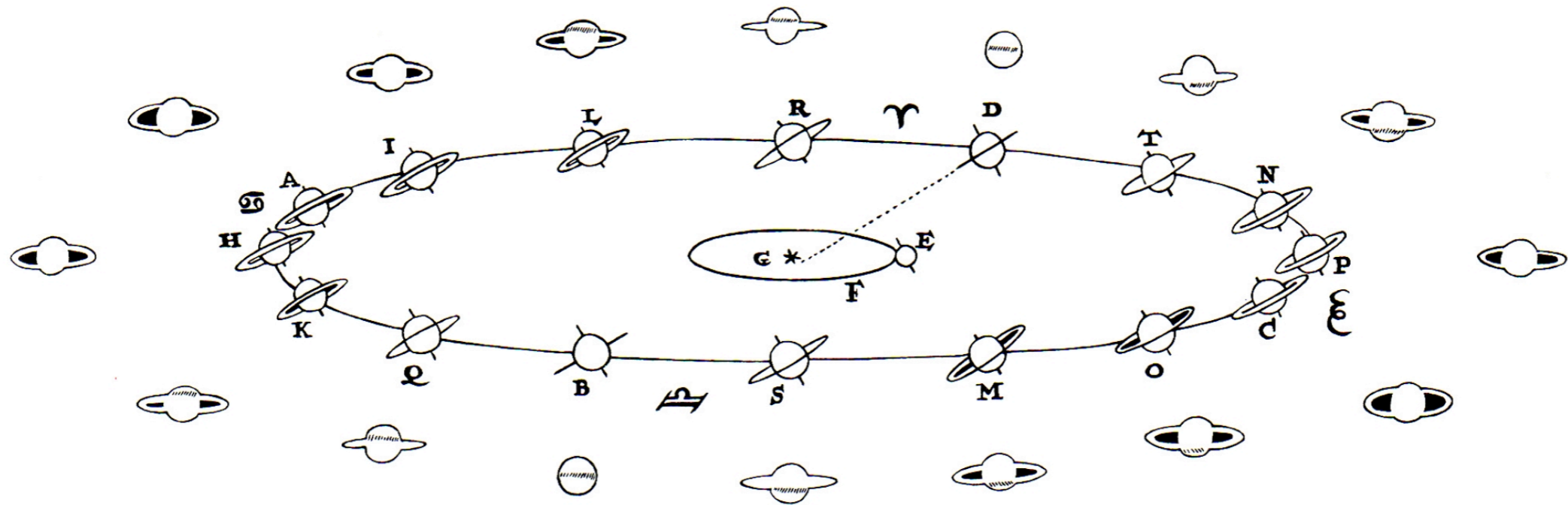


COLOR AND INFORMATION



NARRATIVES OF SPACE AND TIME

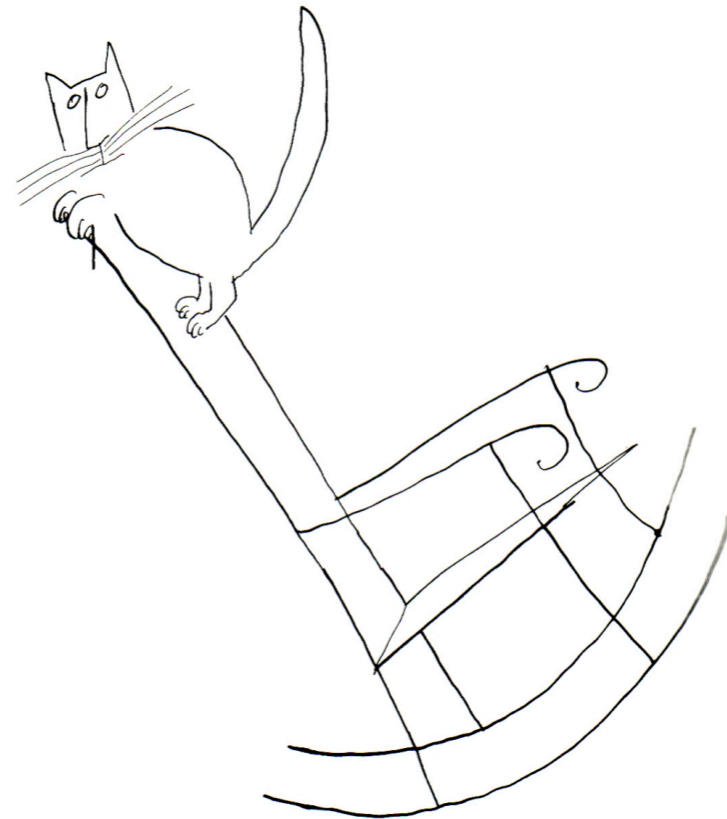
Edward Tufit's lesson: trust clarity, style, elegance.



Christiaan Huygens

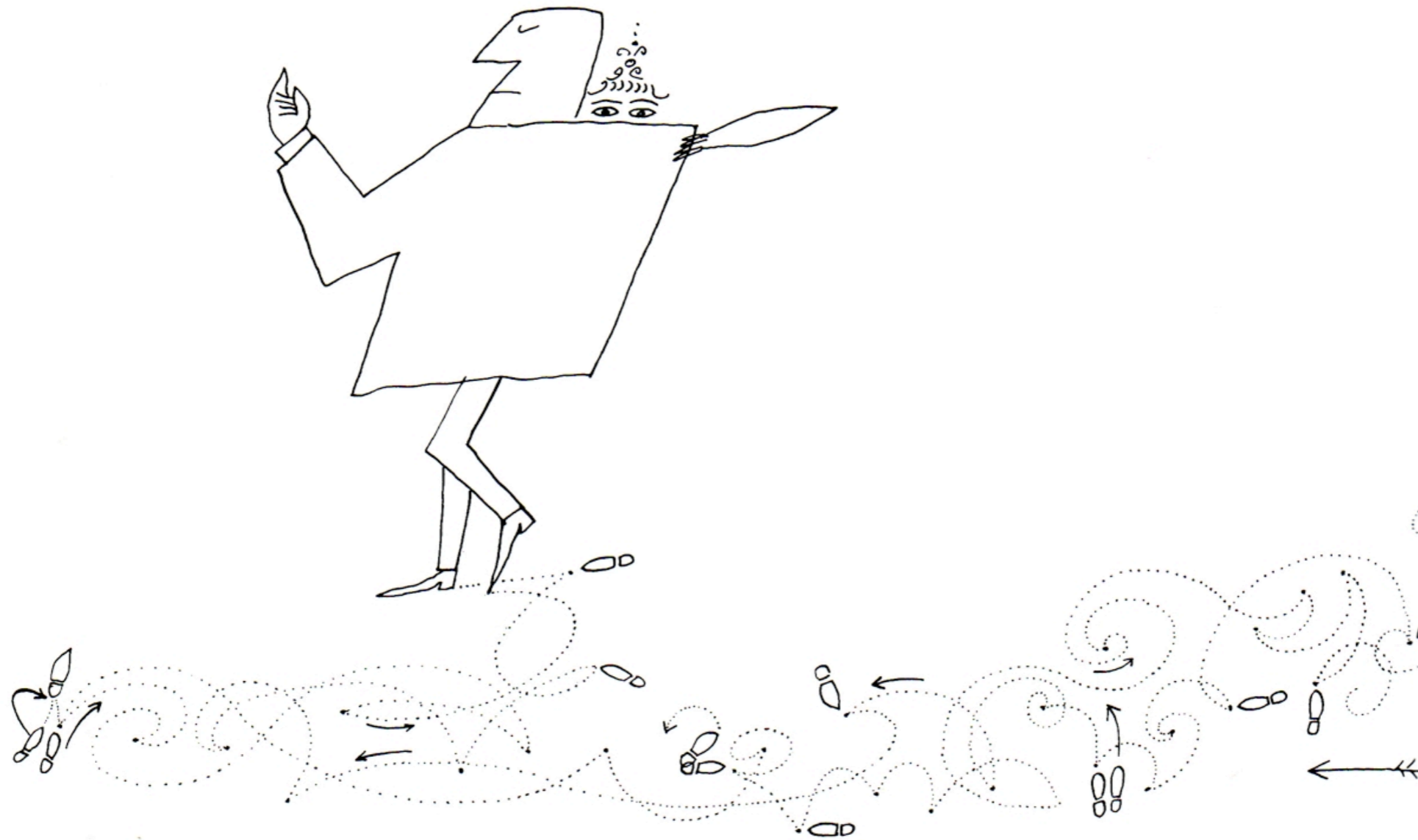


Refraction



Equilibrium

Saul Steinberg's lesson: trust humor



“Un bon croquis vaut mieux
qu’un long discours” (Napoléon)

“Ce qui se conçoit bien s’énonce
clairement et les mots pour le dire
viennent aisément” (Nicolas Boileau)

Transcribe in English for Illustration.

210

Handwritten notes on lined paper, mostly illegible due to blurriness.

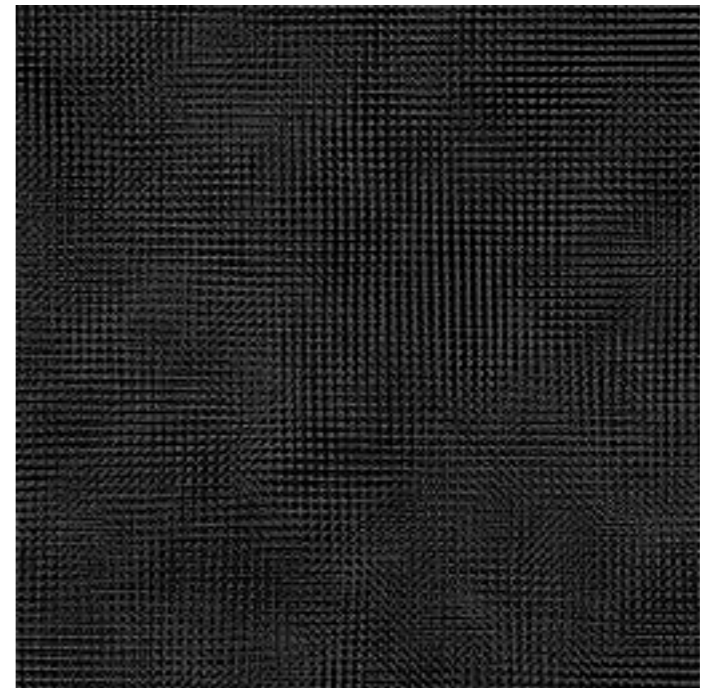
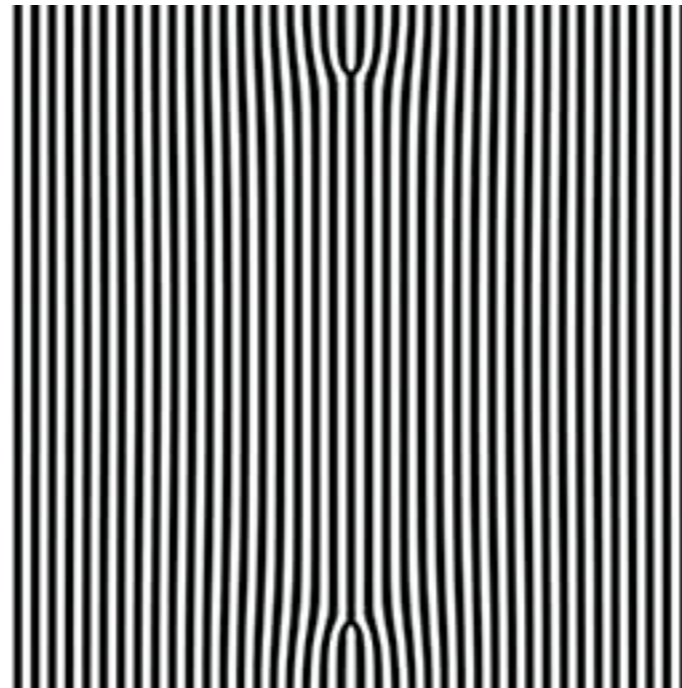
115

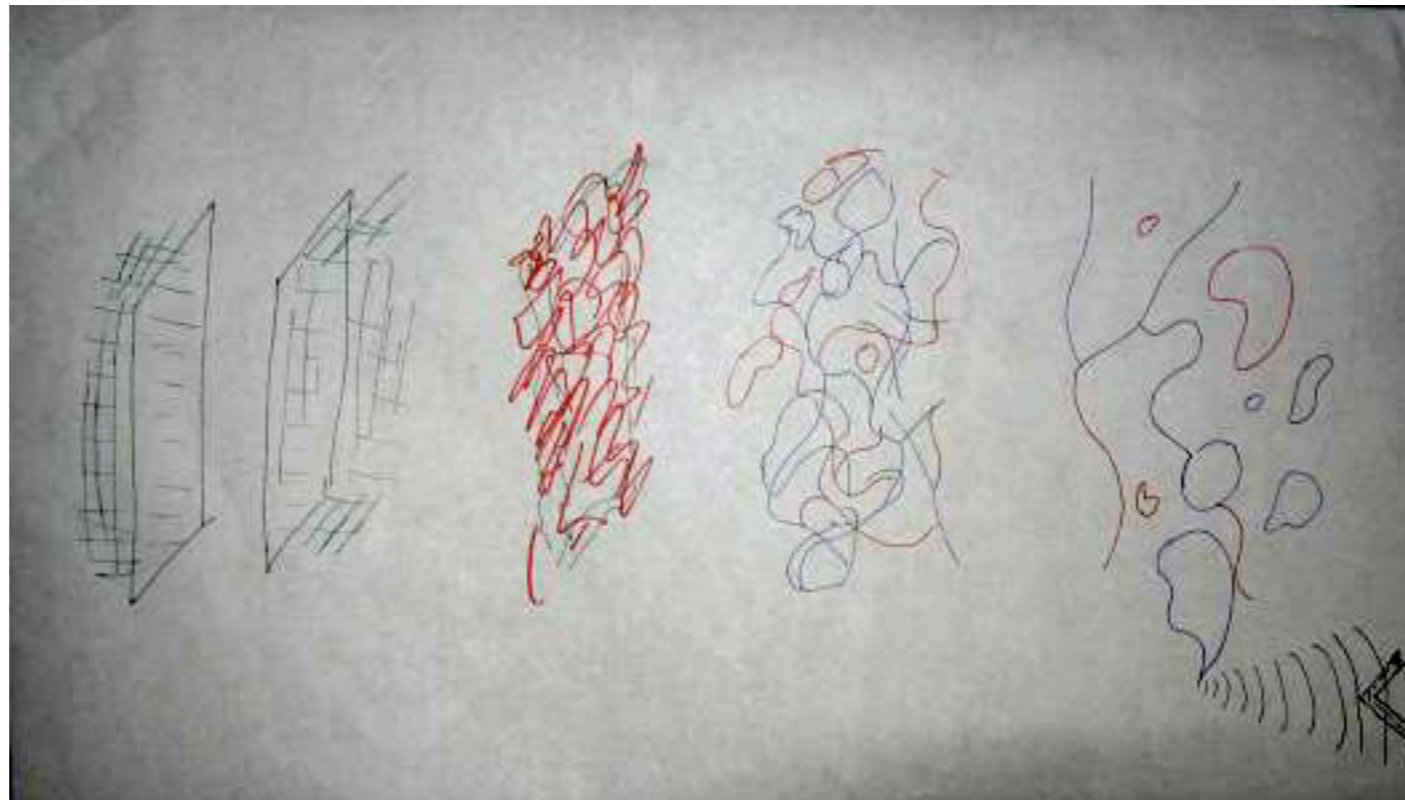
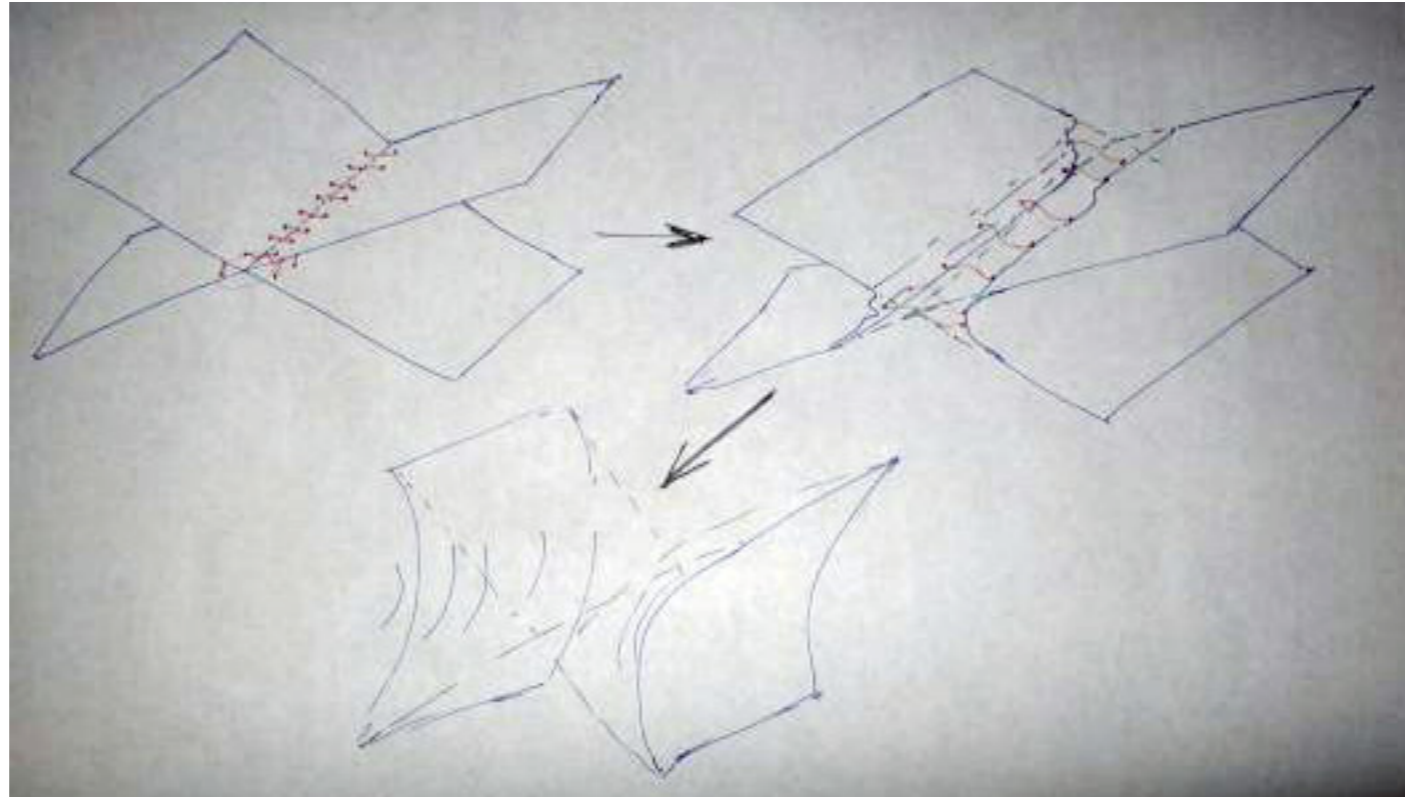
Handwritten notes with red boxes highlighting specific sections.

110

Handwritten notes including a small diagram of a container.

118

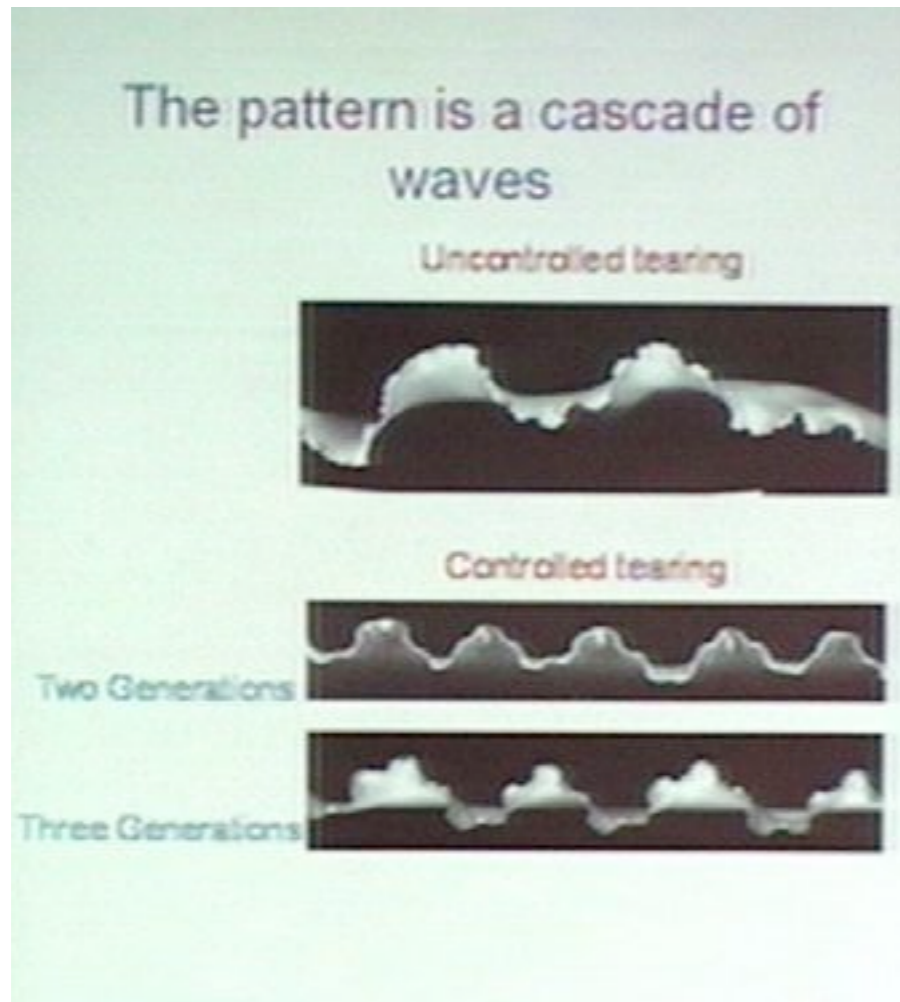




KITP workshop, Fall'03: string group



Dr. Pierre Coulet demonstrating Robert Hook's pendulum experiment during a KITP colloquium



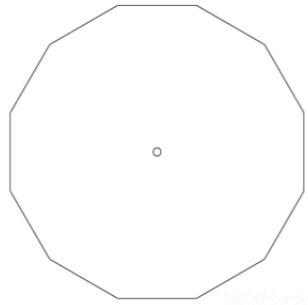
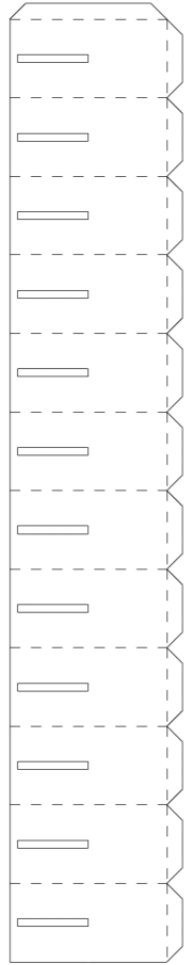
Spontaneous Buckling Cascades Observed in Free Sheets and Leaves Eran Sharon (University of Texas, Austin)

Dr. Eran Sharon distributed to all attendees samples of materials to be torn as a direct experiment illustrating his KITP talk in progress (Pattern Program 2003).

former Scientific American
“Amateur Scientist” monthly pages
Hands on attitude

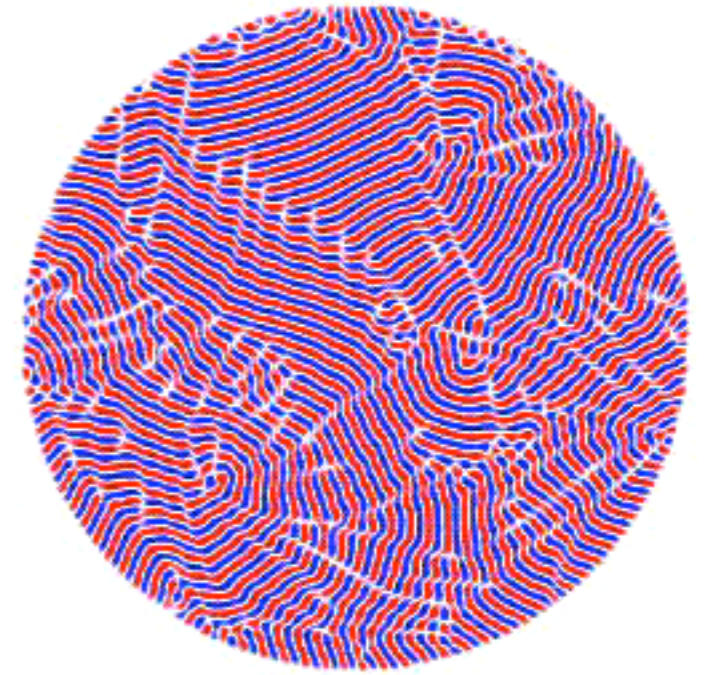
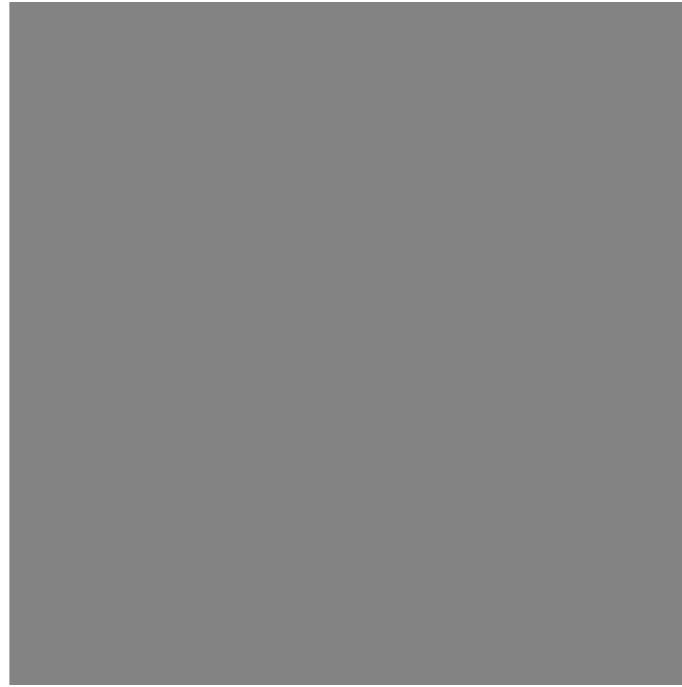
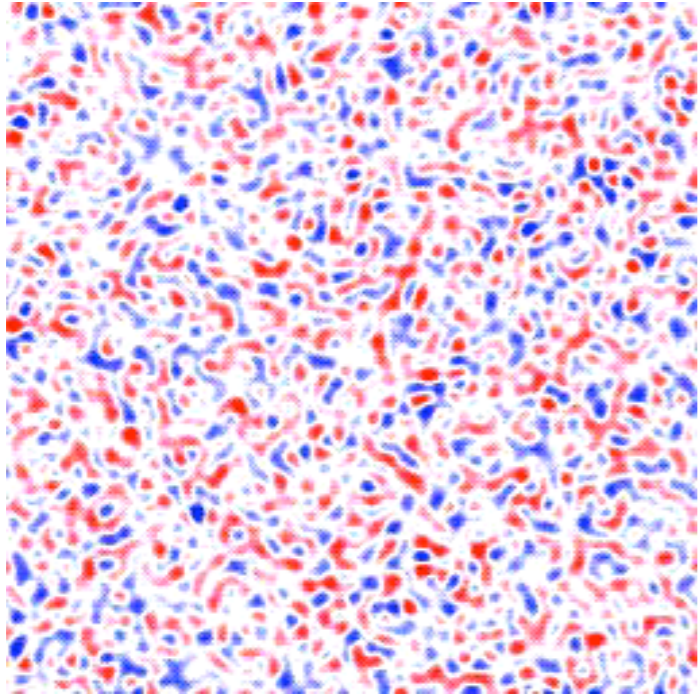
<http://www.amasci.com/amateur/sciam1.html>

Zoetrope

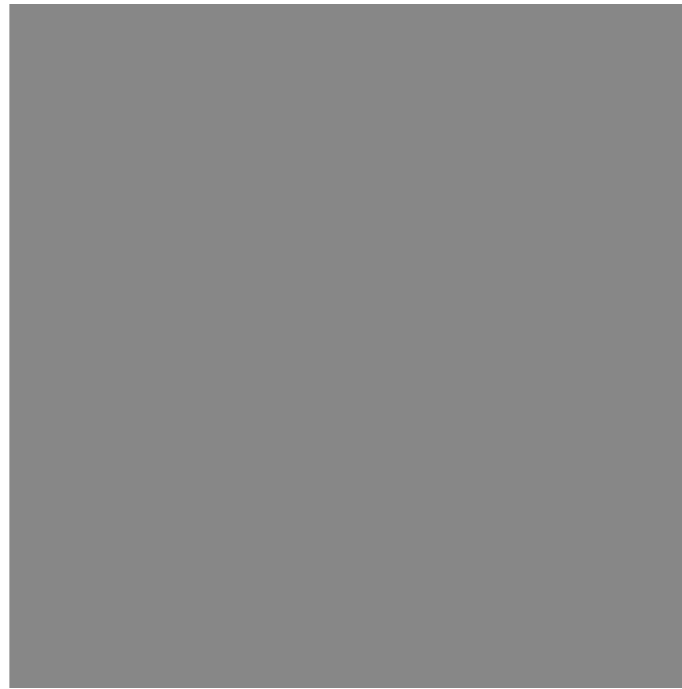
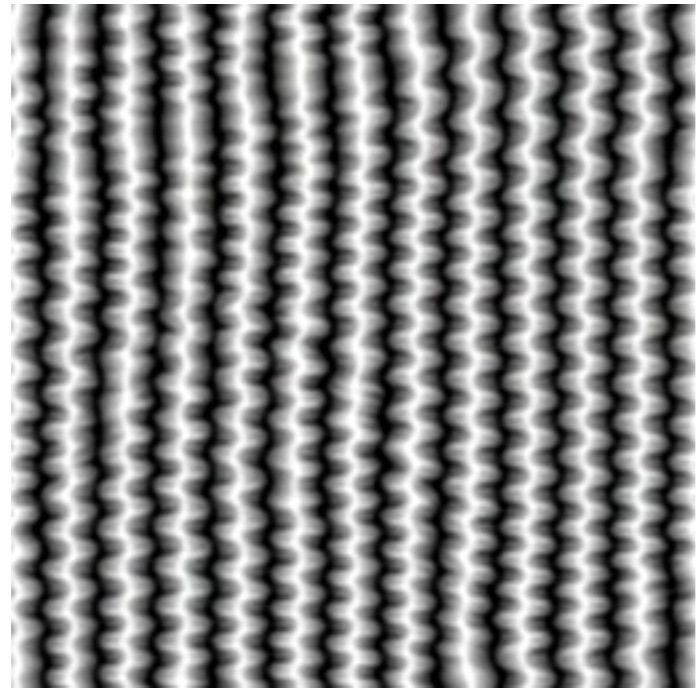


Zoetropes





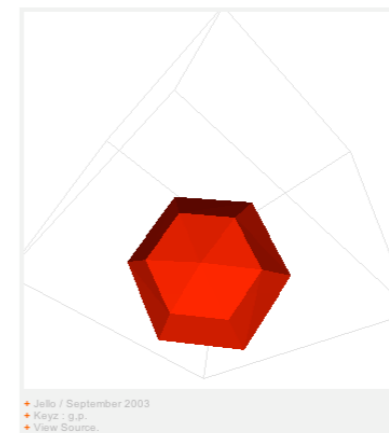
Dr. Werner Pesch

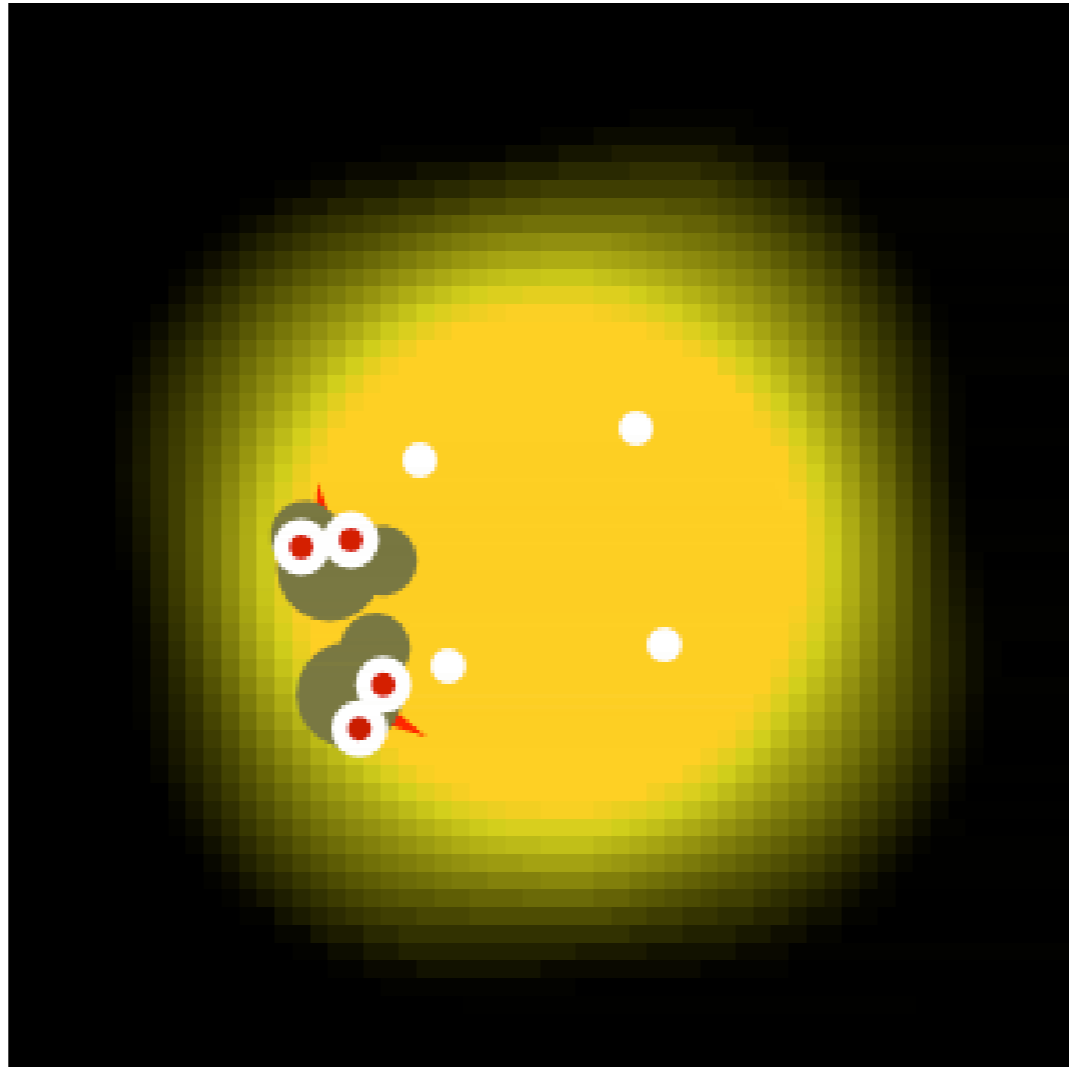


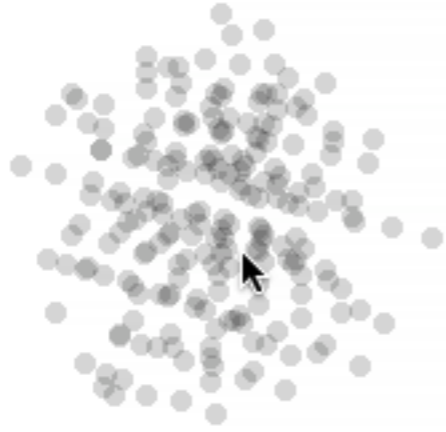
Je n'ai jamais d'aligner des paroles et des paroles, et même des contours...

interactive, remote
virtual experiments
(java, processing, etc...)

<http://v3ga.free.fr/Java/Jello/>

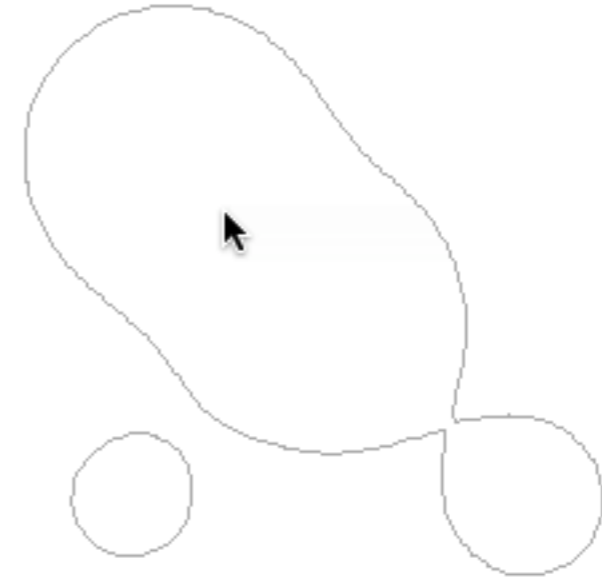
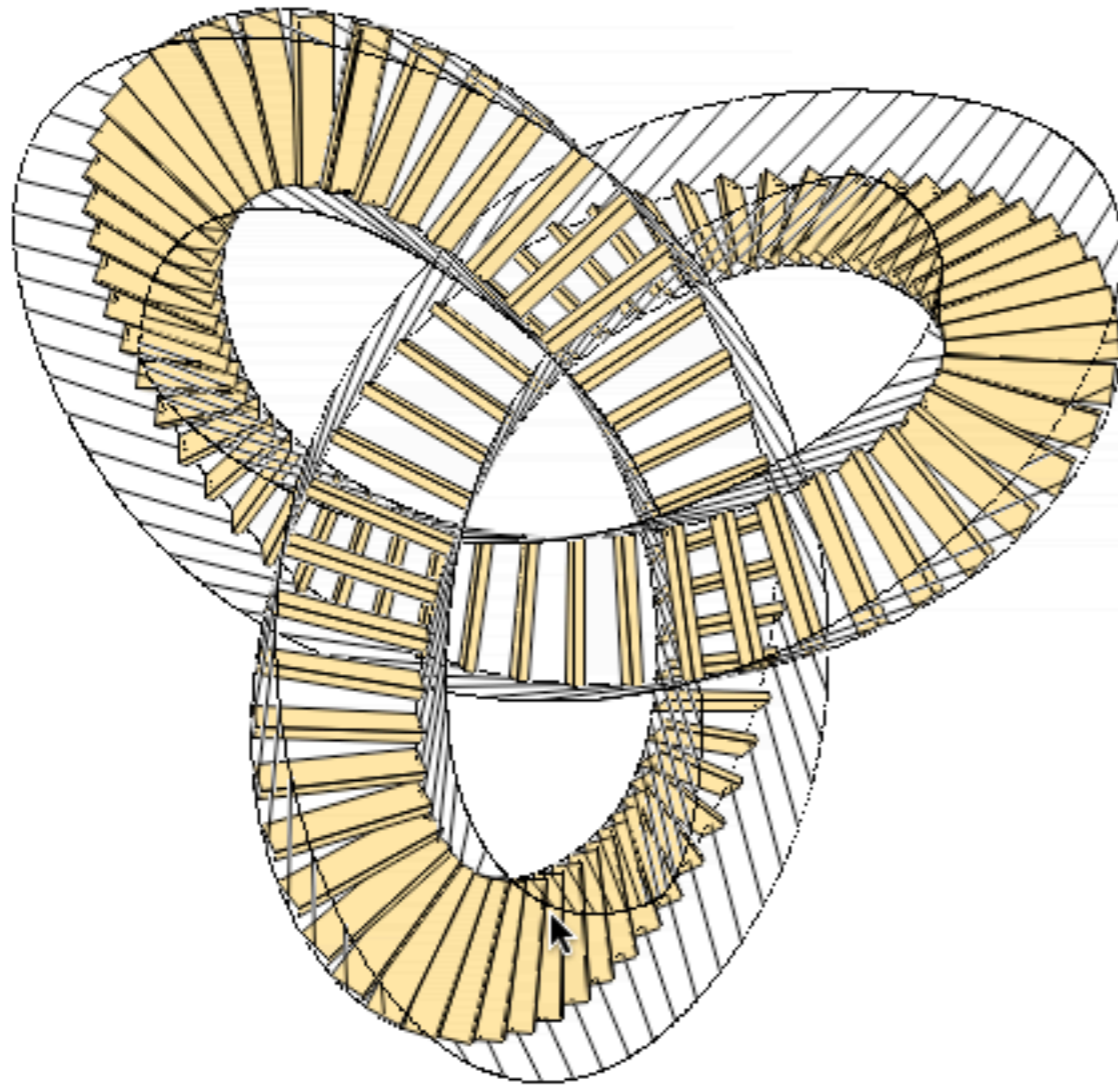






SSSHH





***Liquid Balls**

Take control of a ball with the mouse. Try also the following keys : 1/2/3/4/d/g/+/-
Have fun !

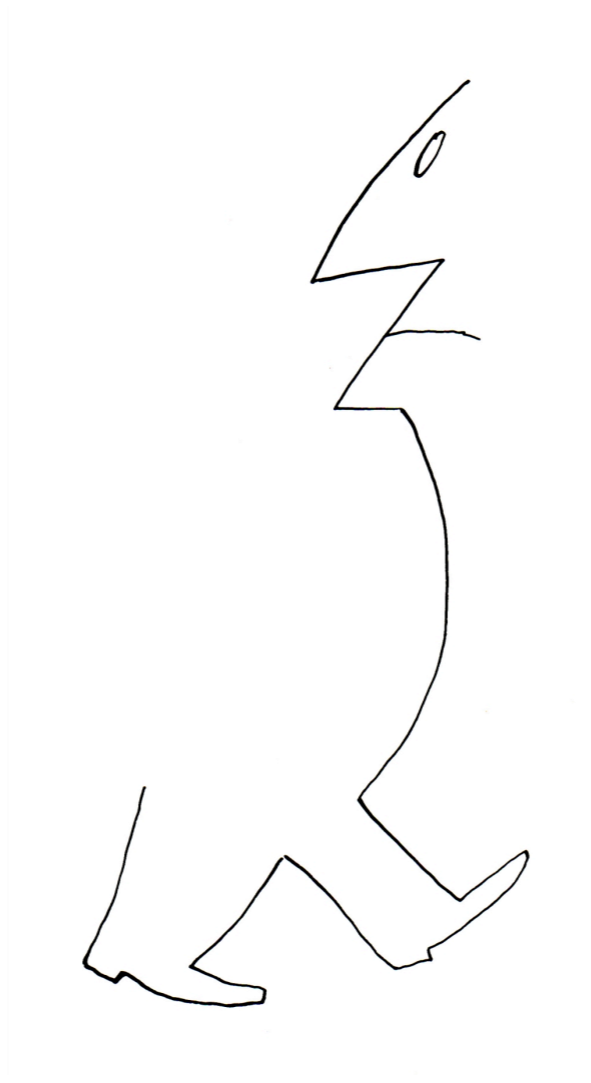
NUM 102 04
LH1 31
LW 8 39
A 10 20
B 17 35
C 0 01

webMathematica

websites that allow users to compute and visualize results directly from a web browser



iChat+iSight+Keynote / Chat-Powerpoint / Macromedia Breeze
soon: teletalks, telepresentations, white/black boards...
courseware



Curvature of Space-Time