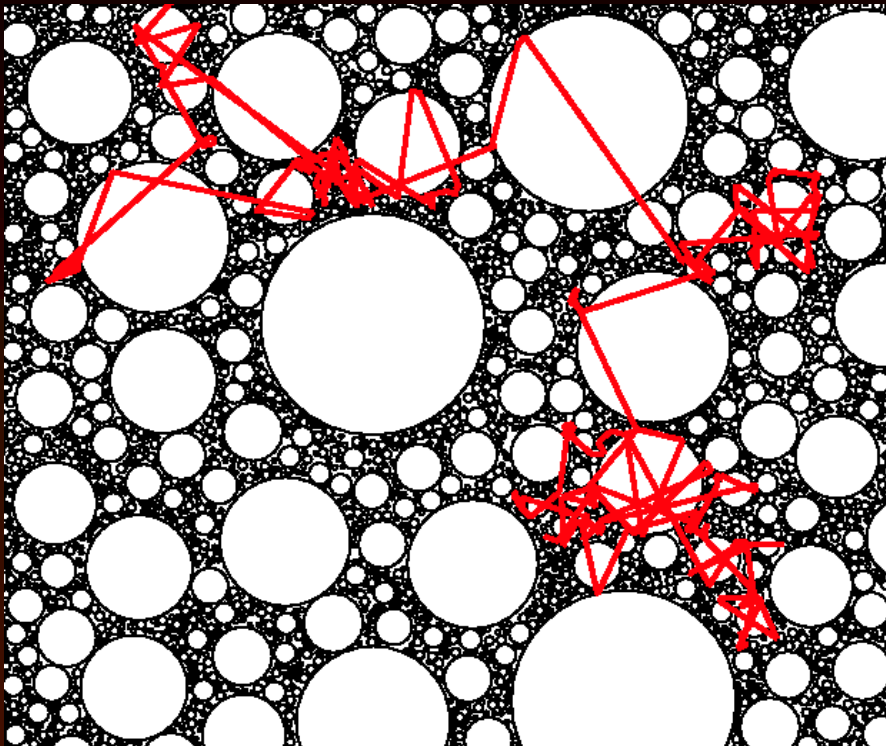


# Diffusione della luce

# Fundamental physics

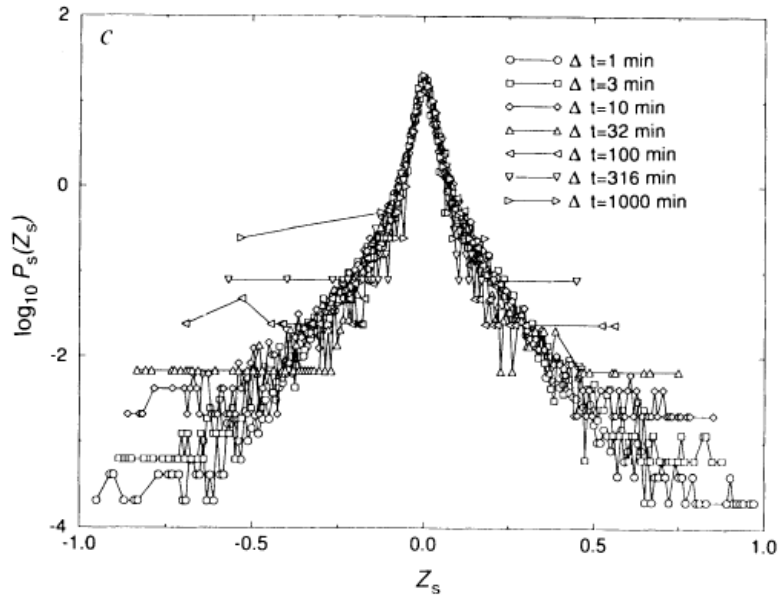


Lévy flight from multiple scattering on  $\text{TiO}_2$  particles



Nature 453, 498 (May 22, 2008)

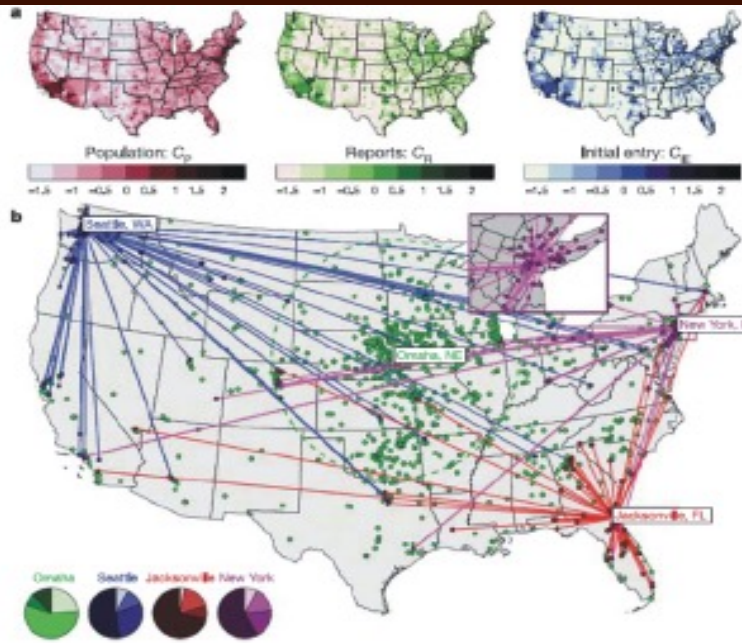
# Lévy statistics



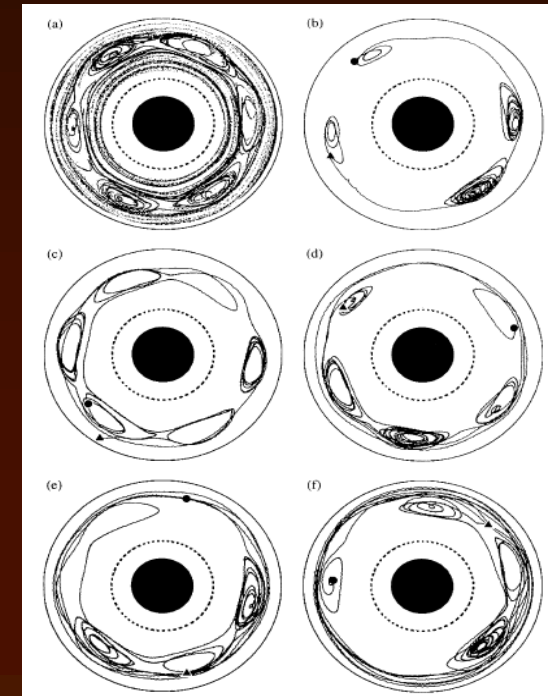
Stock market  
fluctuations



Animal foraging

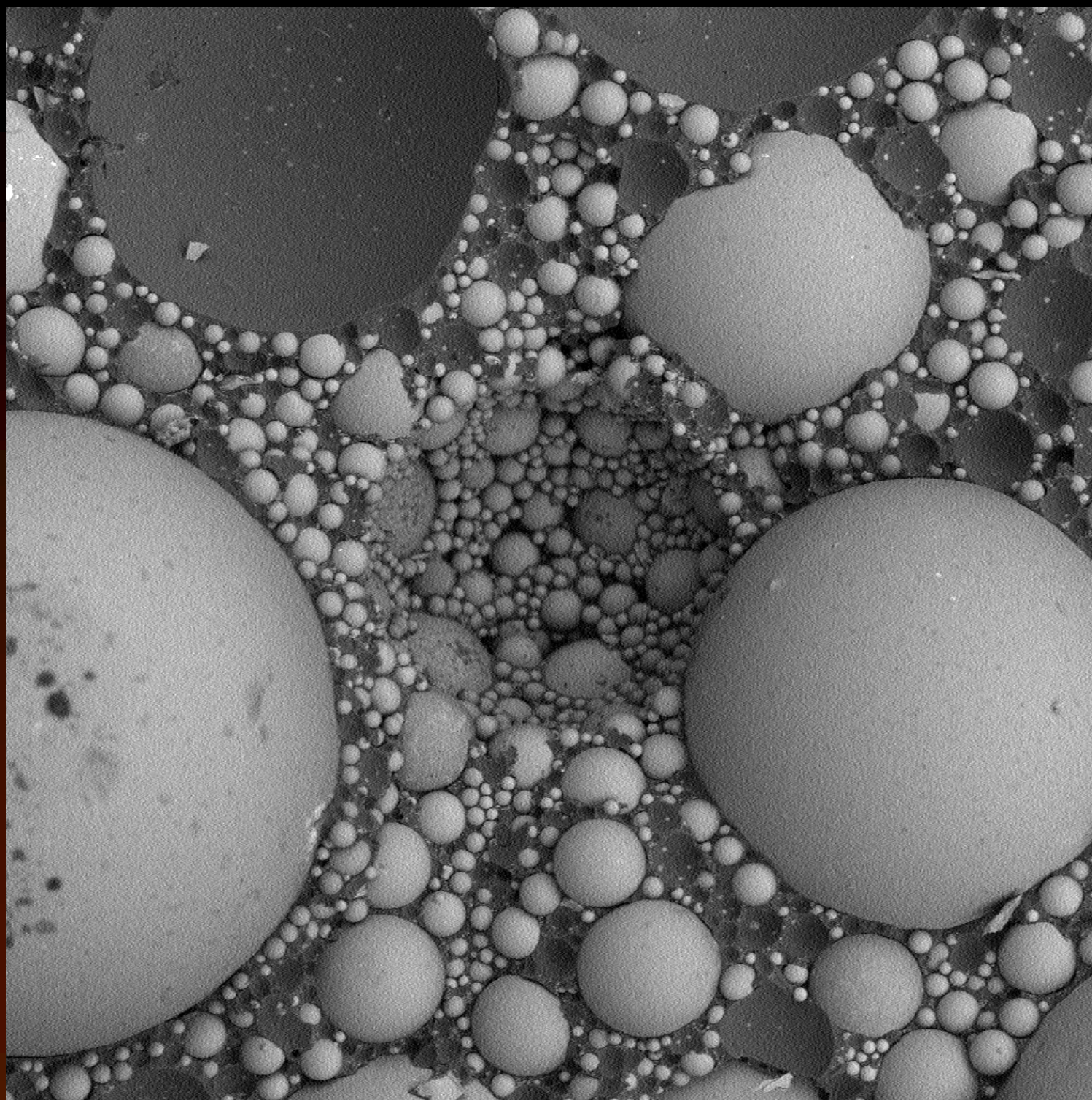


Human travel



Turbulent flow





200μm

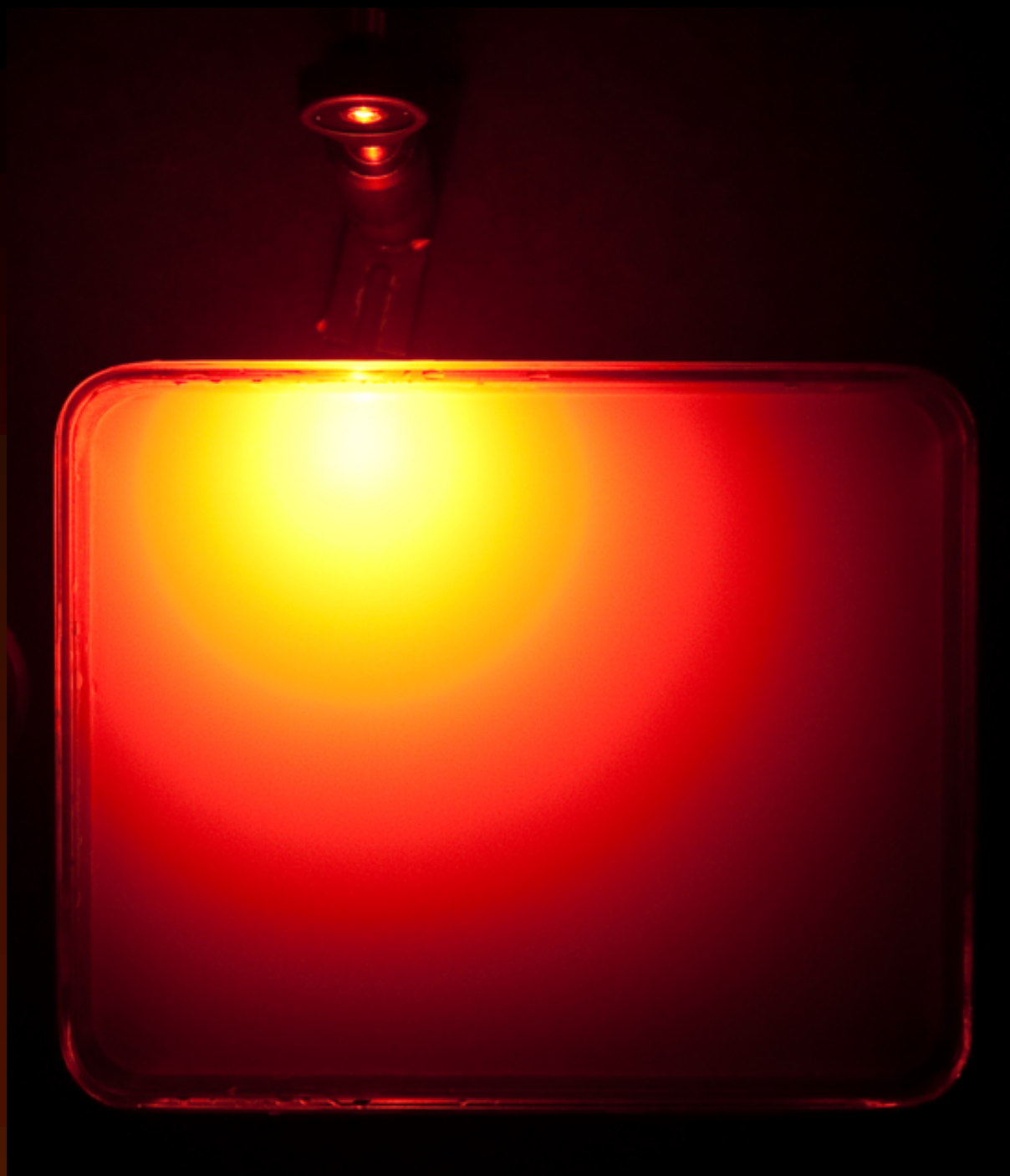


585x  
411 μm

OCT 04 2010 15:57

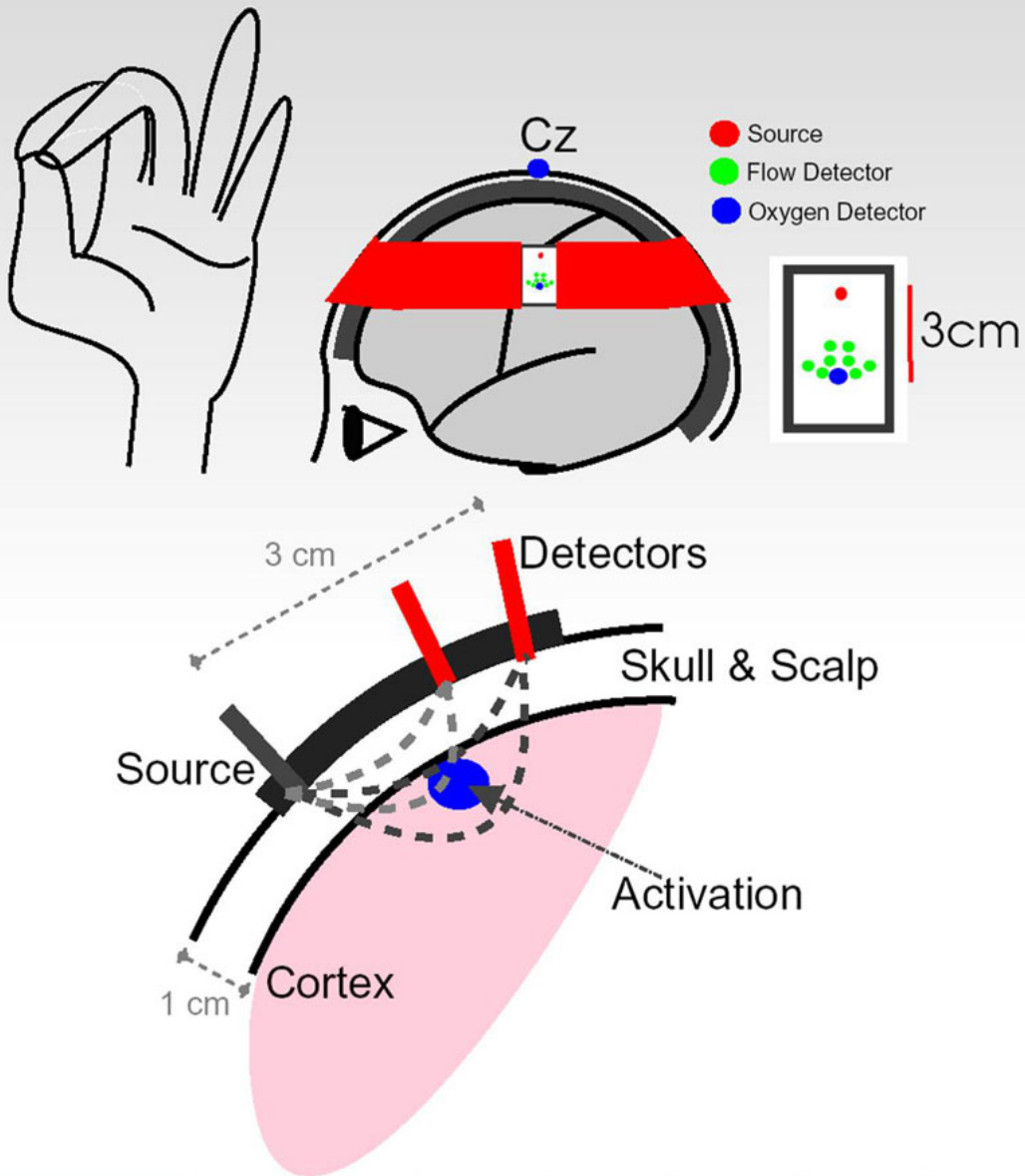
levy romolo





Regine Choe, Univ. of  
Rochester

# Hybrid System



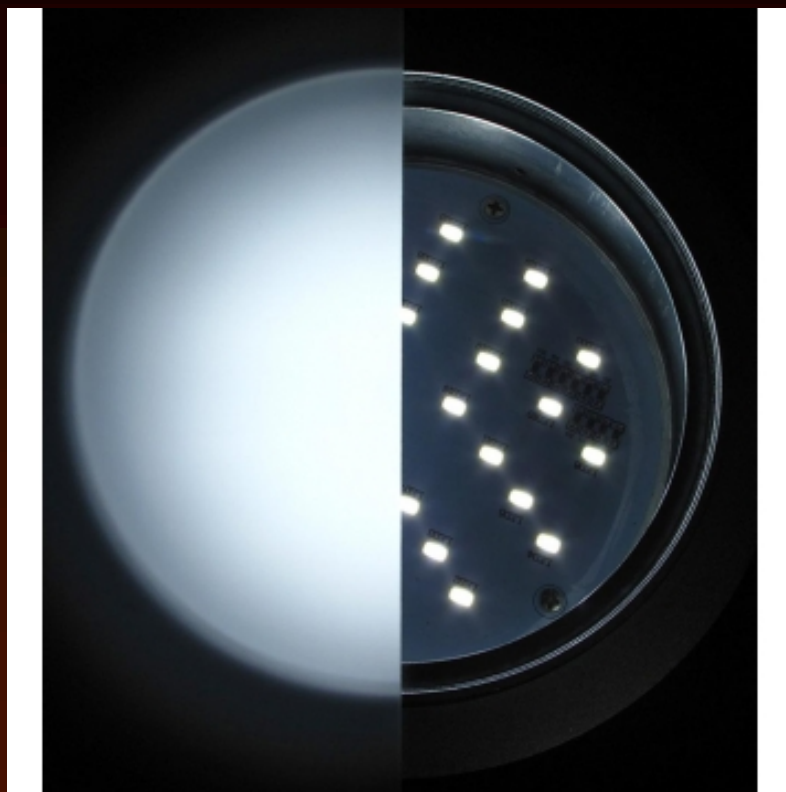
A. Yodh, Univ. Penn.





# Imagent<sup>TM</sup>

Functional Brain Imaging System  
Using Infrared Photons



SingLight, S.M.E.



# Photorealistic Rendering



New Line  
Productions Inc.

# Diffusione







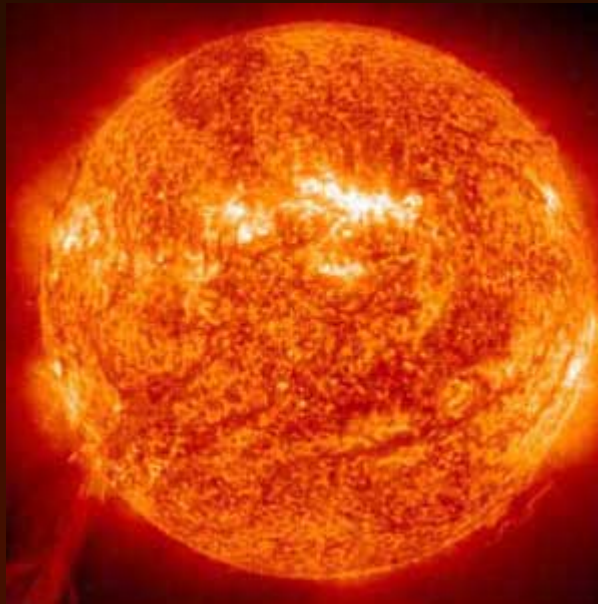


Energia

# Energy and Light



# Easy and clean nuclear energy



# Physical Map of the World, April 2004

AUSTRALIA  
Bermuda  
Sicily / AZORES  
★

Independent state  
Dependency or area of special sovereignty  
Island / island group  
Capital

Scale 1:33,000,000  
Robinson Projection  
Standard parallels 36°N and 36°S



April 2004

Names of countries, islands, and other geographical features have been made as close as possible to the original. However, some names have been changed to fit the map and have not been changed to reflect the latest changes. Boundaries representation is not necessarily authoritative.

ROBINSON PROJECTION

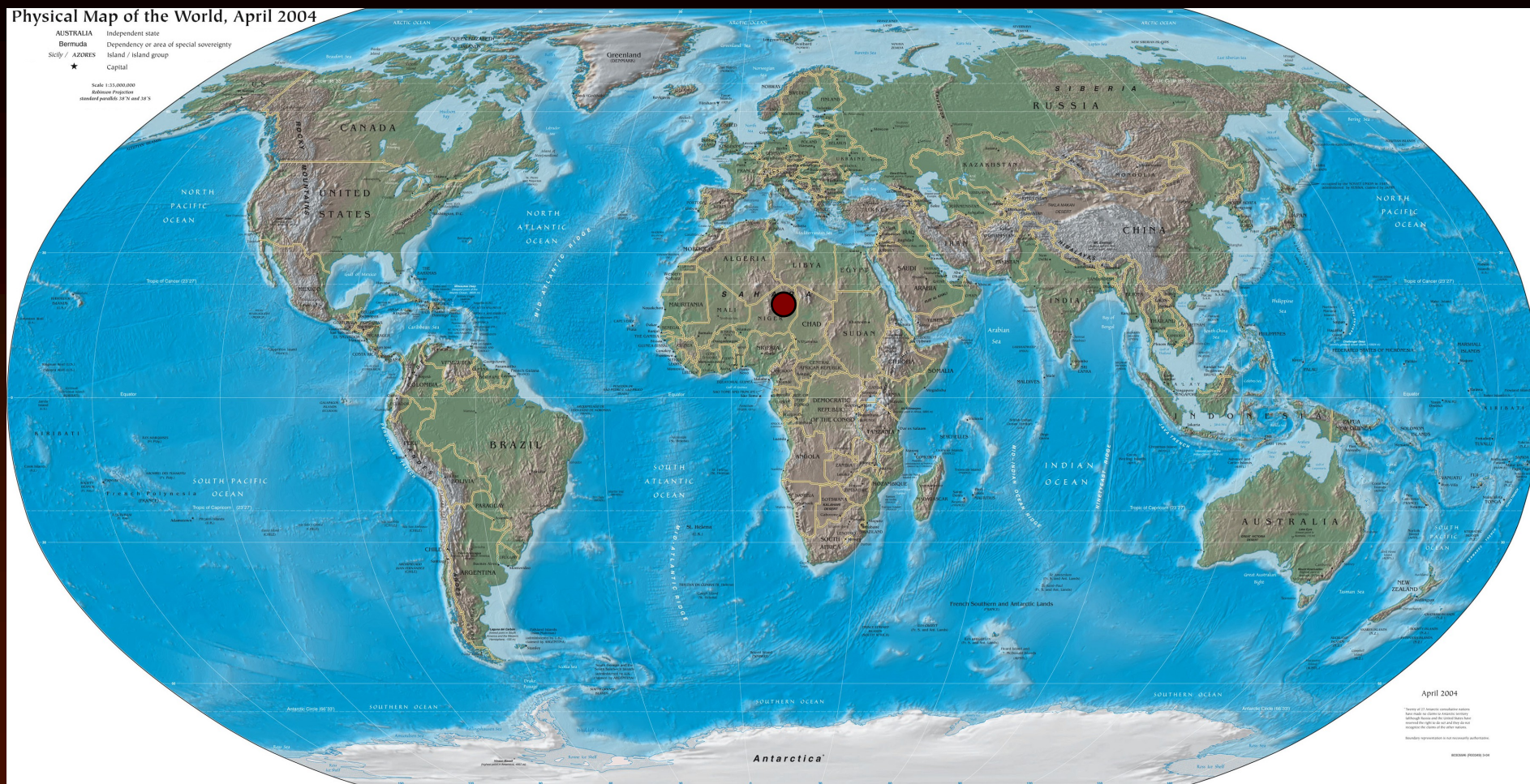


# Physical Map of the World, April 2004

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# Physical Map of the World, April 2004

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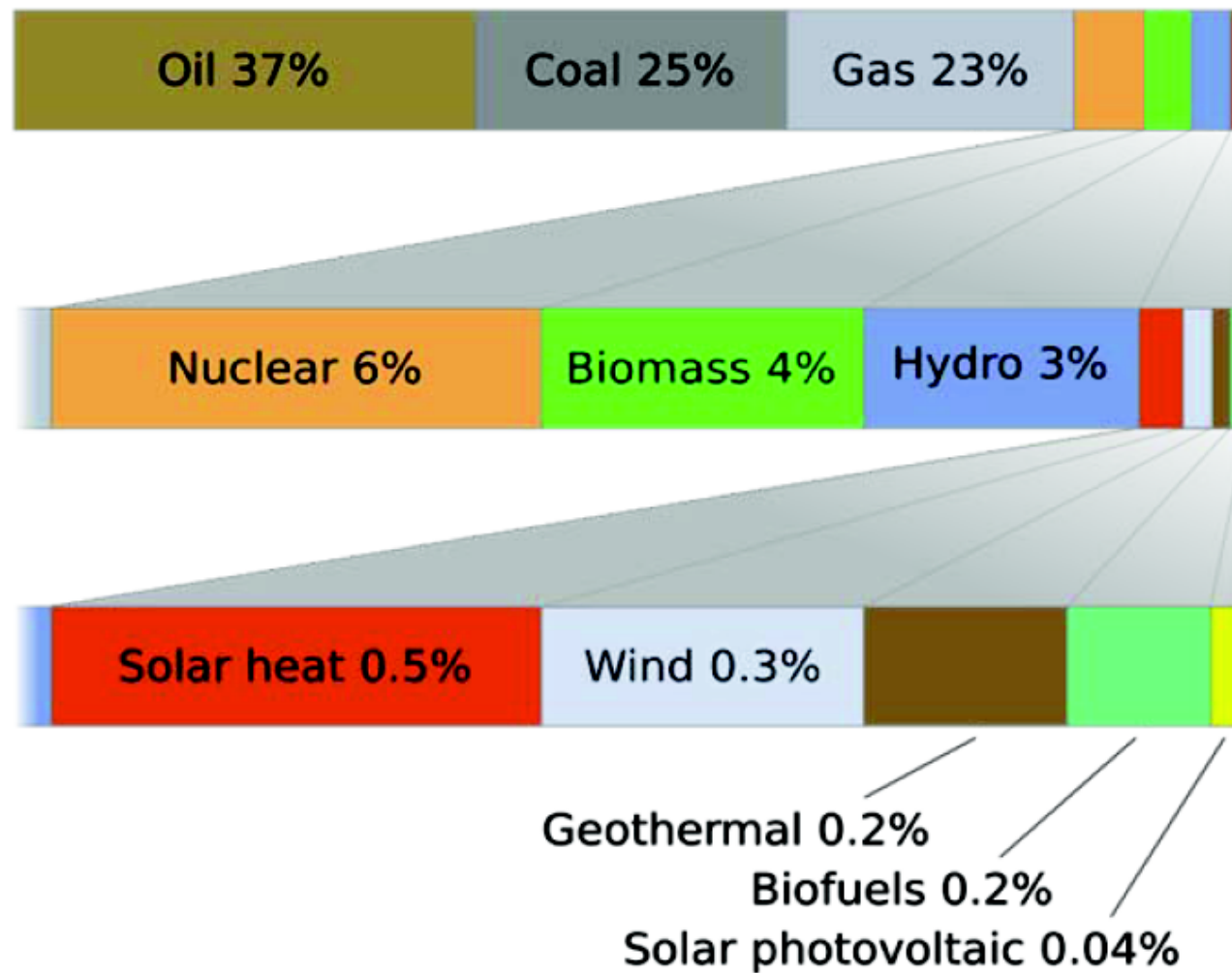
Scale 1:33,000,000  
Robinson Projection  
Standard parallels 36°N and 36°S



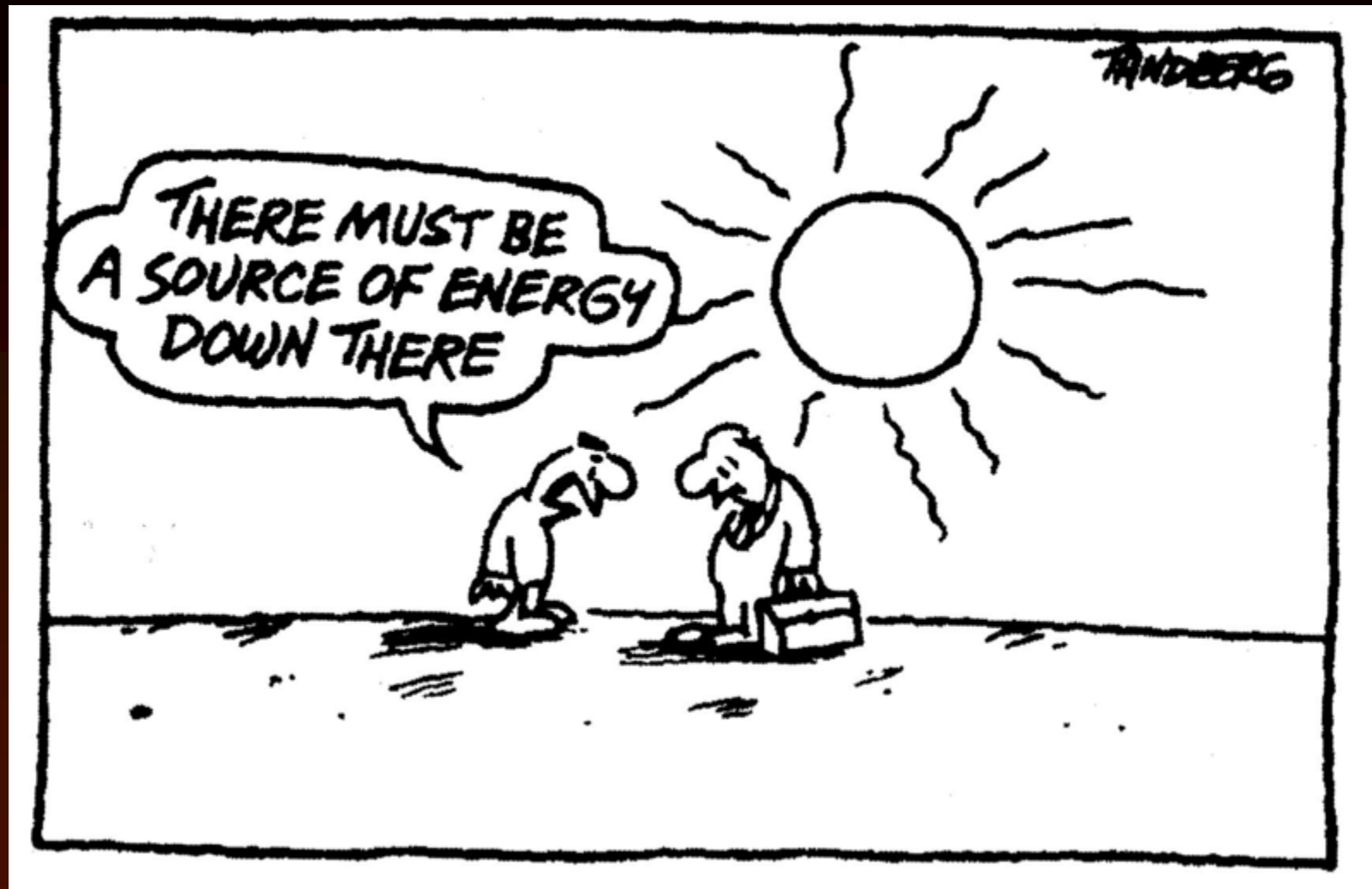
# How much is this surface?

- 1/18 of the Sahara desert
- US highway is:
  - Enough for 100 percent US energy need

# Current world energy sources

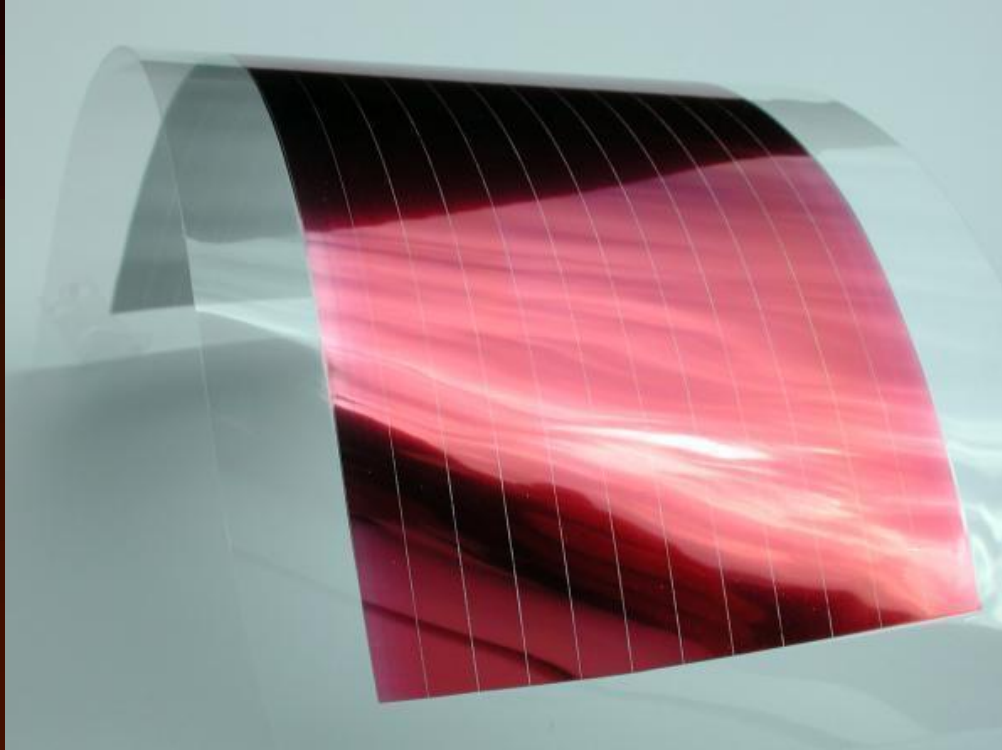




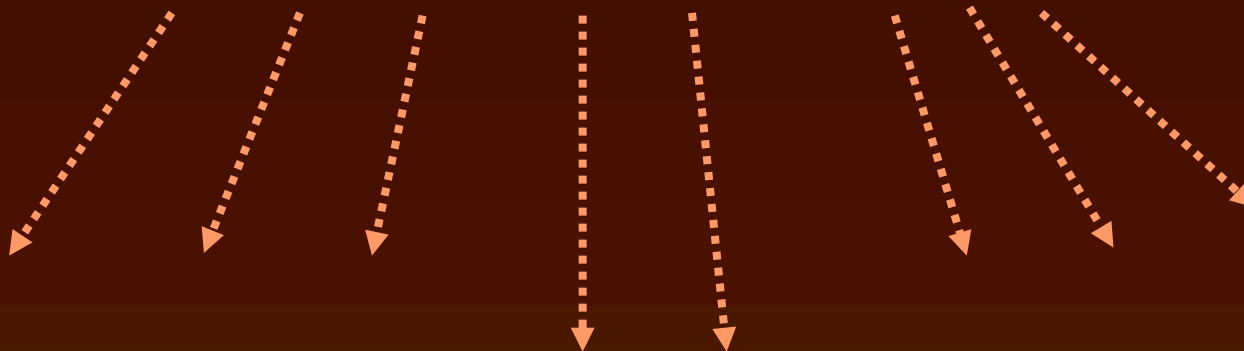
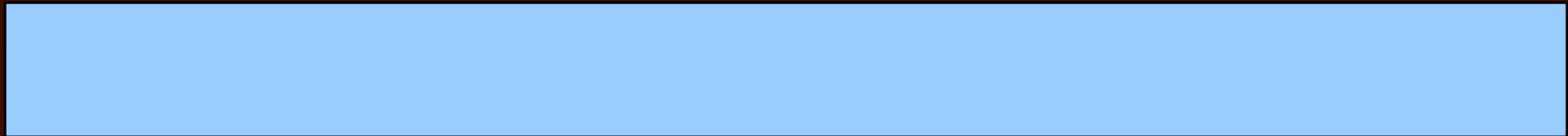
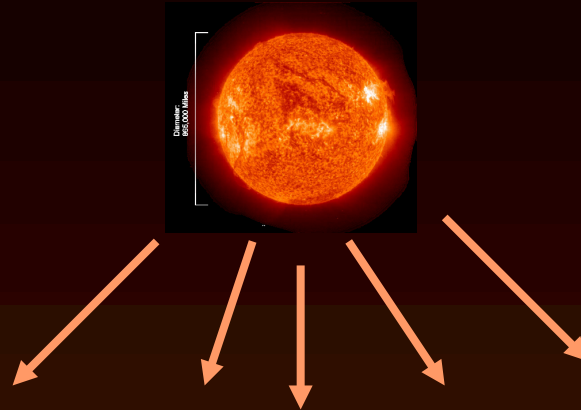


© Ron Tandberg

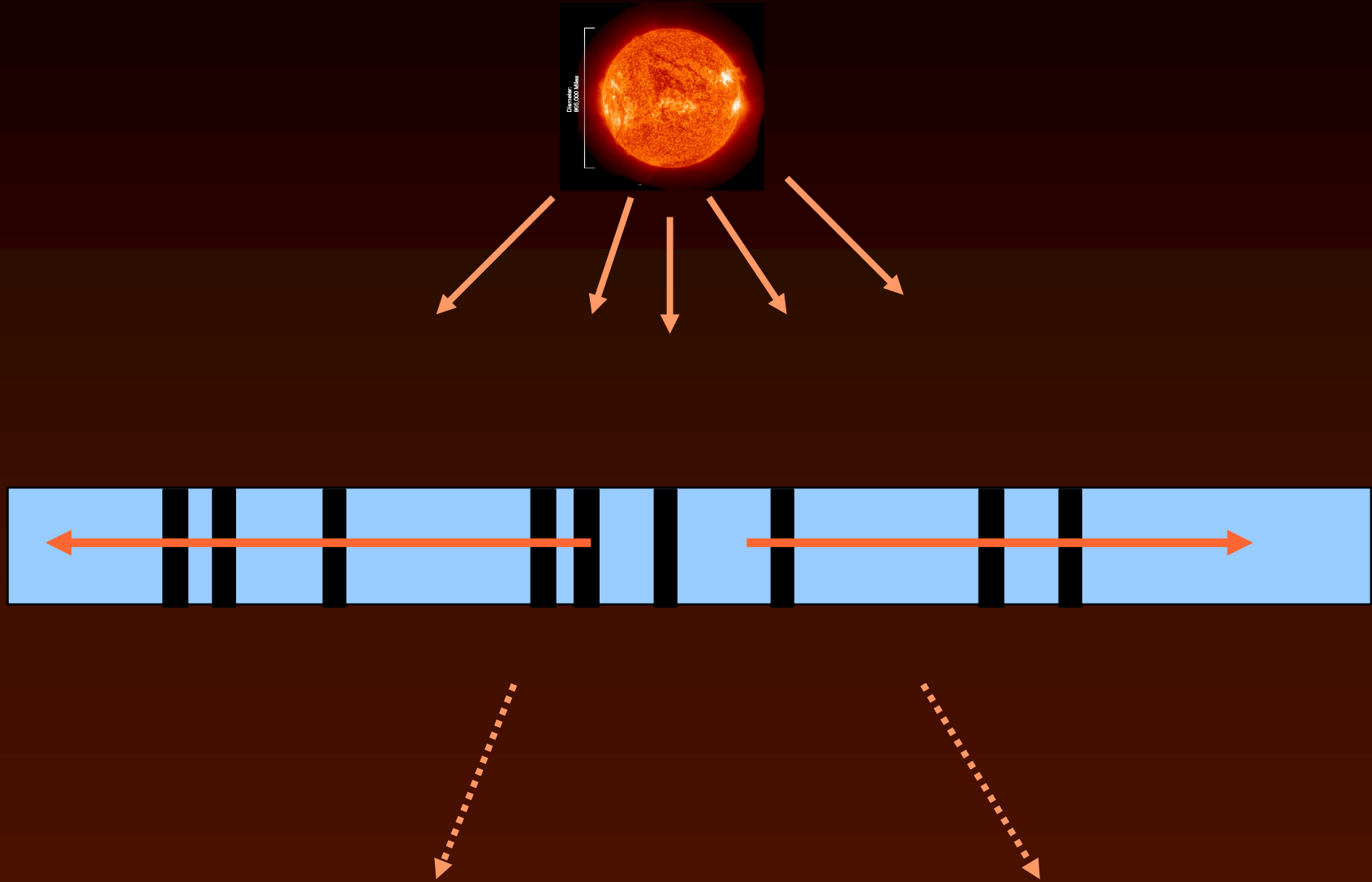
# Photonics for solar energy



# Trapping light in thin films

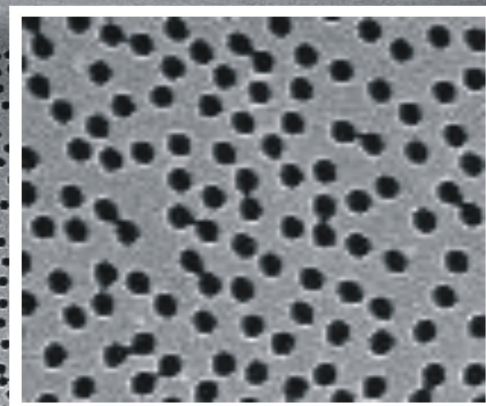


# Trapping light in thin films



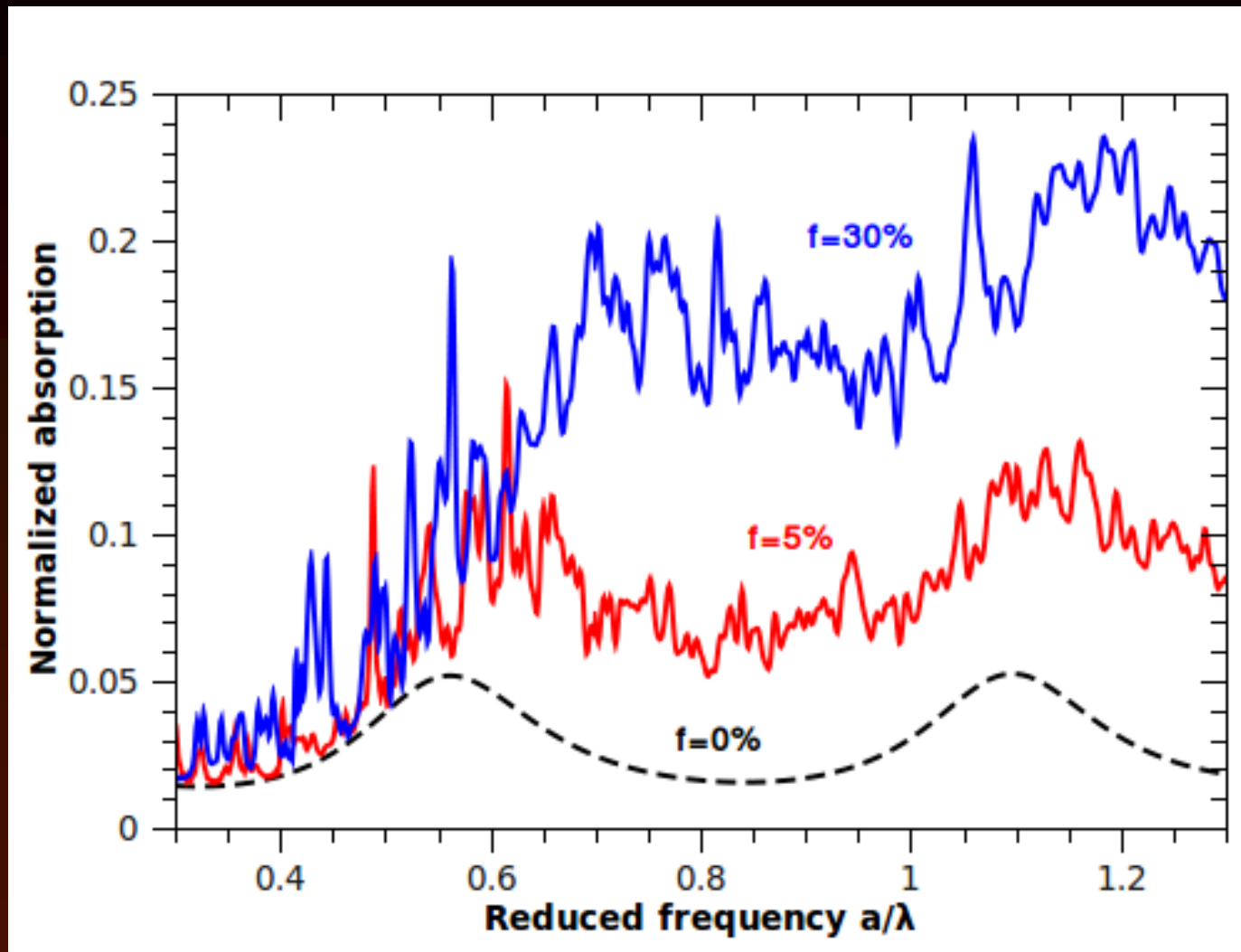


b)



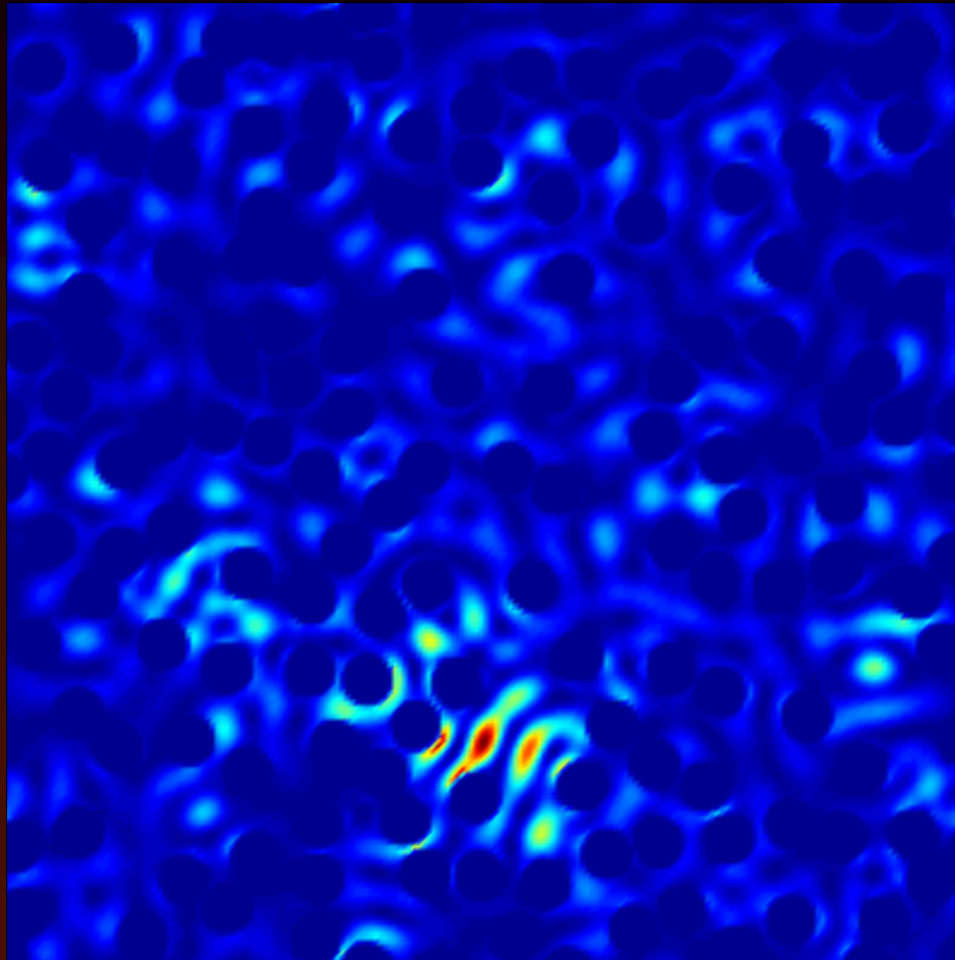
10  $\mu\text{m}$

# Absorption enhancement



Nature Materials 13, 720 (2014).

# In-plane distribution light intensity



Interference effects, Anderson localization





Roof of ECN building, Petten, the Netherlands





INO  
ISTITUTO NAZIONALE  
DI OTTICA



# Disordered photonics

*LENS, Univ. Firenze, INO-CNR, Sesto Fiorentino*

[www.lens.unifi.it](http://www.lens.unifi.it)

Diederik S. Wiersma

Lorenzo Cortese  
Chih Hua Ho  
Daniele Martella  
Sara Nocentini  
Dmitry Nuzhdin  
Camilla Parmeggiani  
Lorenzo Patelli  
Francesco Utel  
Anjani Kumar Tiwari  
Hao Zeng

Matteo Burresi  
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Costanza Toninelli  
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Stefano Lepri

