What is **Light-Field**?
What is **Light-Field** or **directional** imaging?

**4D radiance**

- rays
- pixel
- CCD
What is **Light-Field** or **directional** display?
Lippmann

Nobel Laureate for Color Photography 1908
Lippmann

Integral Photographs (Light-Field Photography) 1908
Ives 1930 (Lenticulars)
Coffey 1935 (F/# matching)
Gruetzner (1952) commercial camera
Dudnikov 1970 - 1982 (detailed research)
Ivars 1988 (Diffraction lenses)
Adelson 1991 (Plenoptic Function)
Adelson 1992 (Plenoptic Camera)

Designed with the idea to solve Computer Vision problems
Levoy 1996 (Light Field Rendering)
Levoy 1996 (Light Field Rendering)
Isaksen 2000 (Light Field “Reparametrization”)
Billy Chen 2002 (Autostereoscopic Display)
Ng 2005 (Hand-Held Plenoptic Camera)

Note: The first digital camera (1975) produced image 0.01 Megapixels. The first digital lightfield camera (2005) produced image 0.1 Megapixels. Ren is 10 times better!
Fife 2008 ("Light-Field" Chip)