

# Post-survey of spectroscopy

concept mapping

# Frames of reference

Einstein's theories of special and general relativity require you select your frame of reference

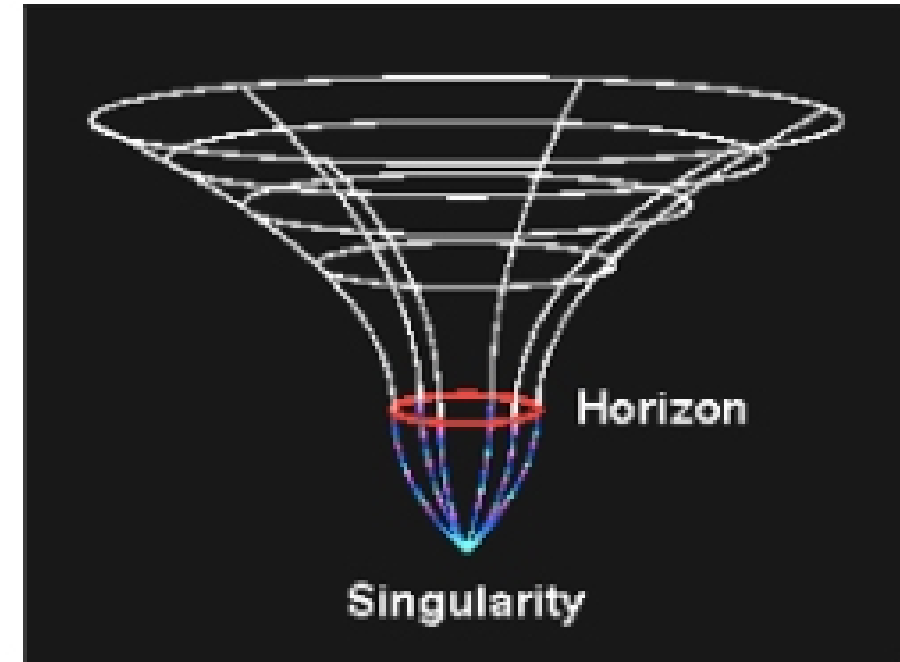
- Spaghettification - define
- “Your” experience as you fall approach the event horizon
- Your “friend’s” experience watching you

$$r_{\text{schwarzschild}} = 2G \frac{M}{c^2}$$

Schwarzschild radius (center to event horizon) of a black hole depends solely on mass of black hole.

Solar-mass star: radius is about 3 km.

For a 5-million solar mass supermassive black hole, radius is ~15 million km.



<http://casa.colorado.edu/~ajsh/schwp.html>