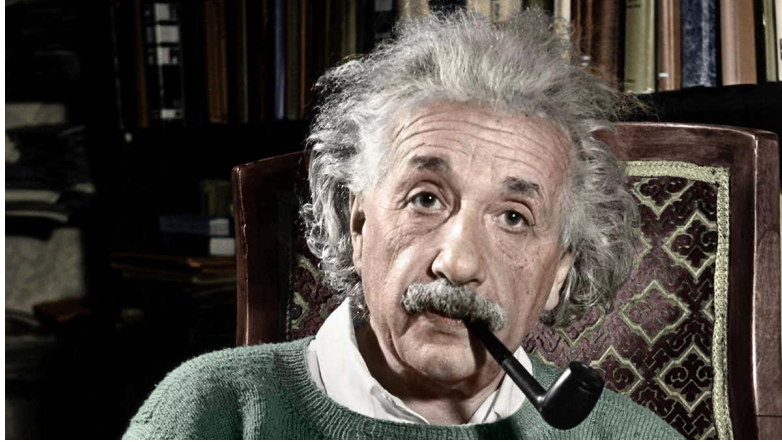


SHEAPbit

GENERAL RELATIVITY

Apimook Watcharongkool



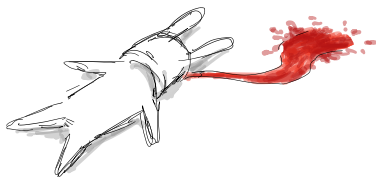
~~Einstein equation~~

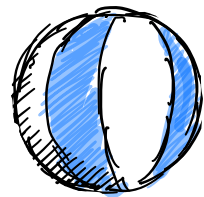


$$E = mc^2$$

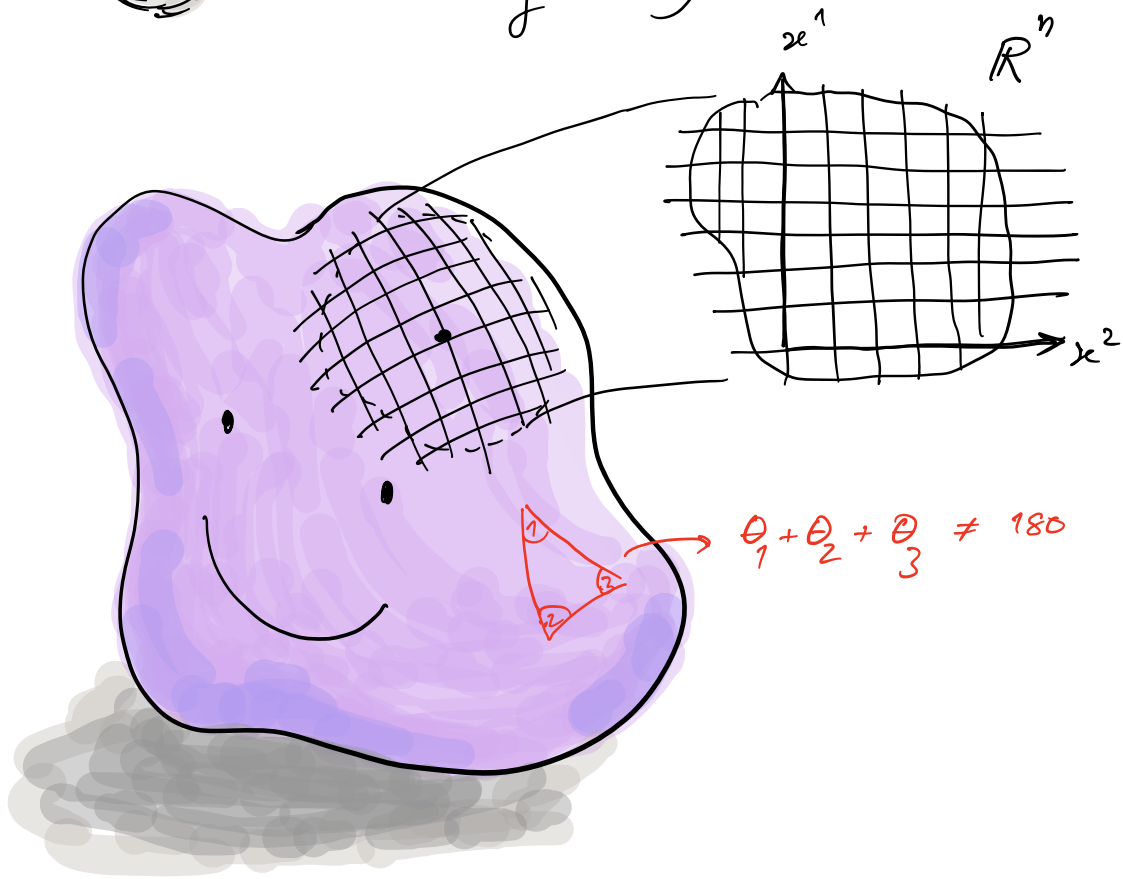
$$G_{\mu\nu} = \frac{8\pi G}{c^4} T_{\mu\nu}$$

↑ Einstein equation

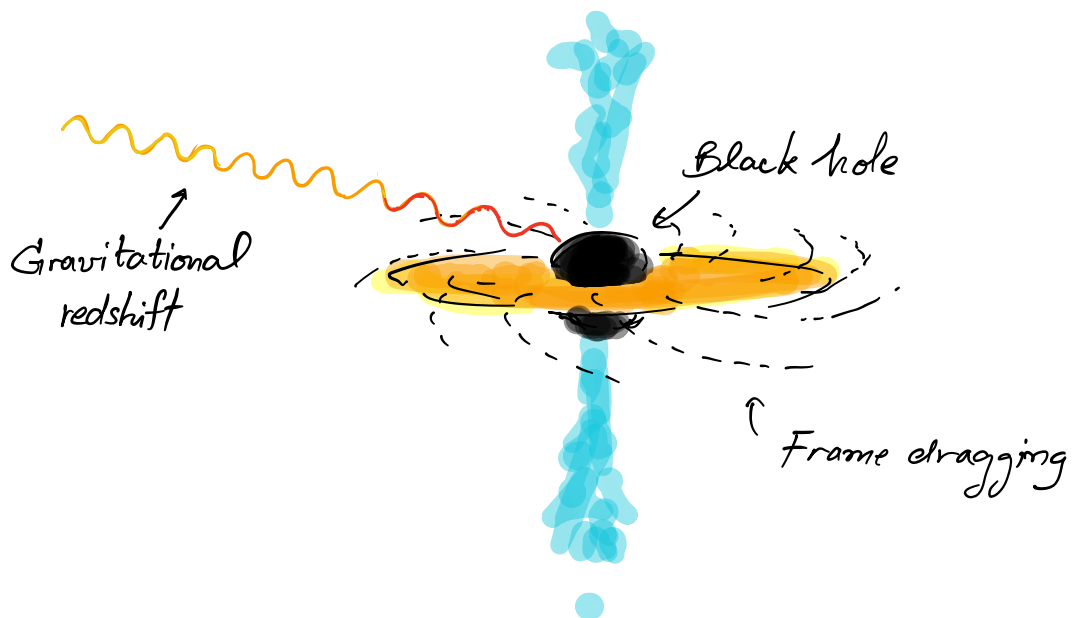
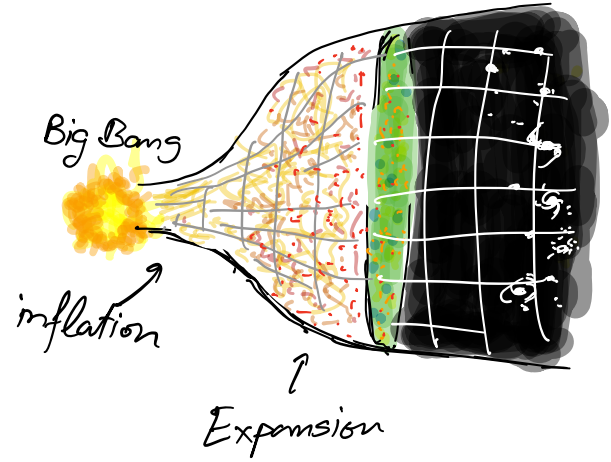
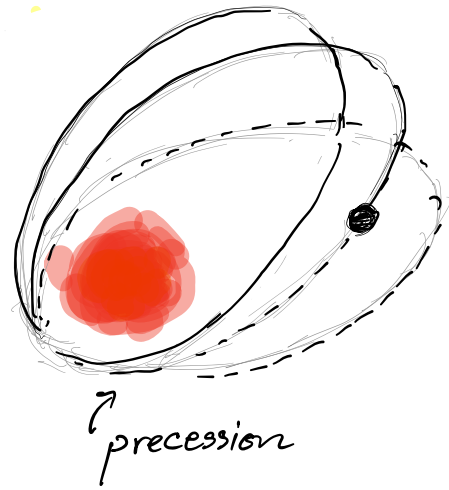
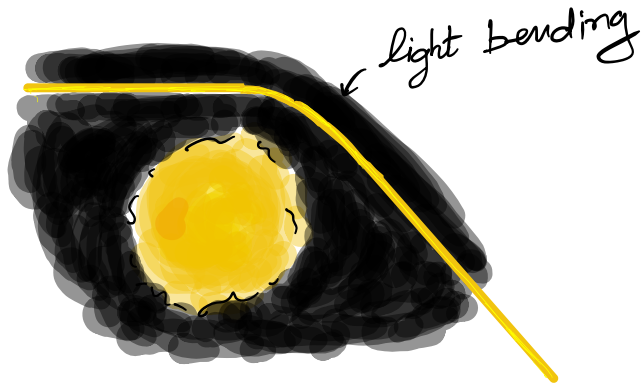




Riemannian
geometry



$$\theta_1 + \theta_2 + \theta_3 \neq 180$$





String theory

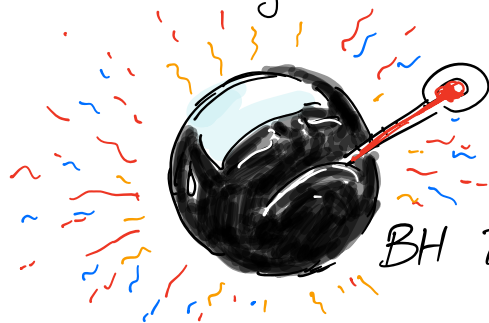
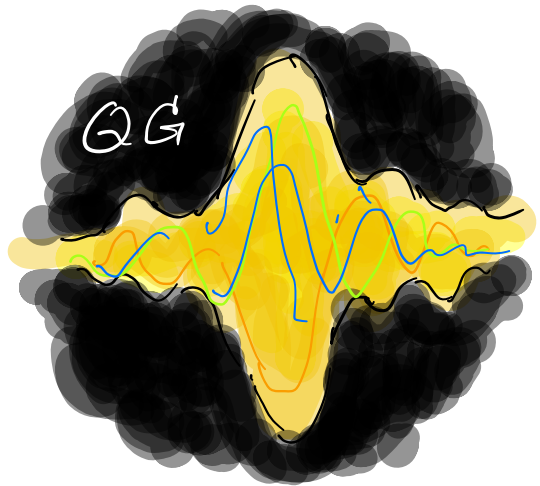
Λ CDM



Quantum field
on Curved spacetime

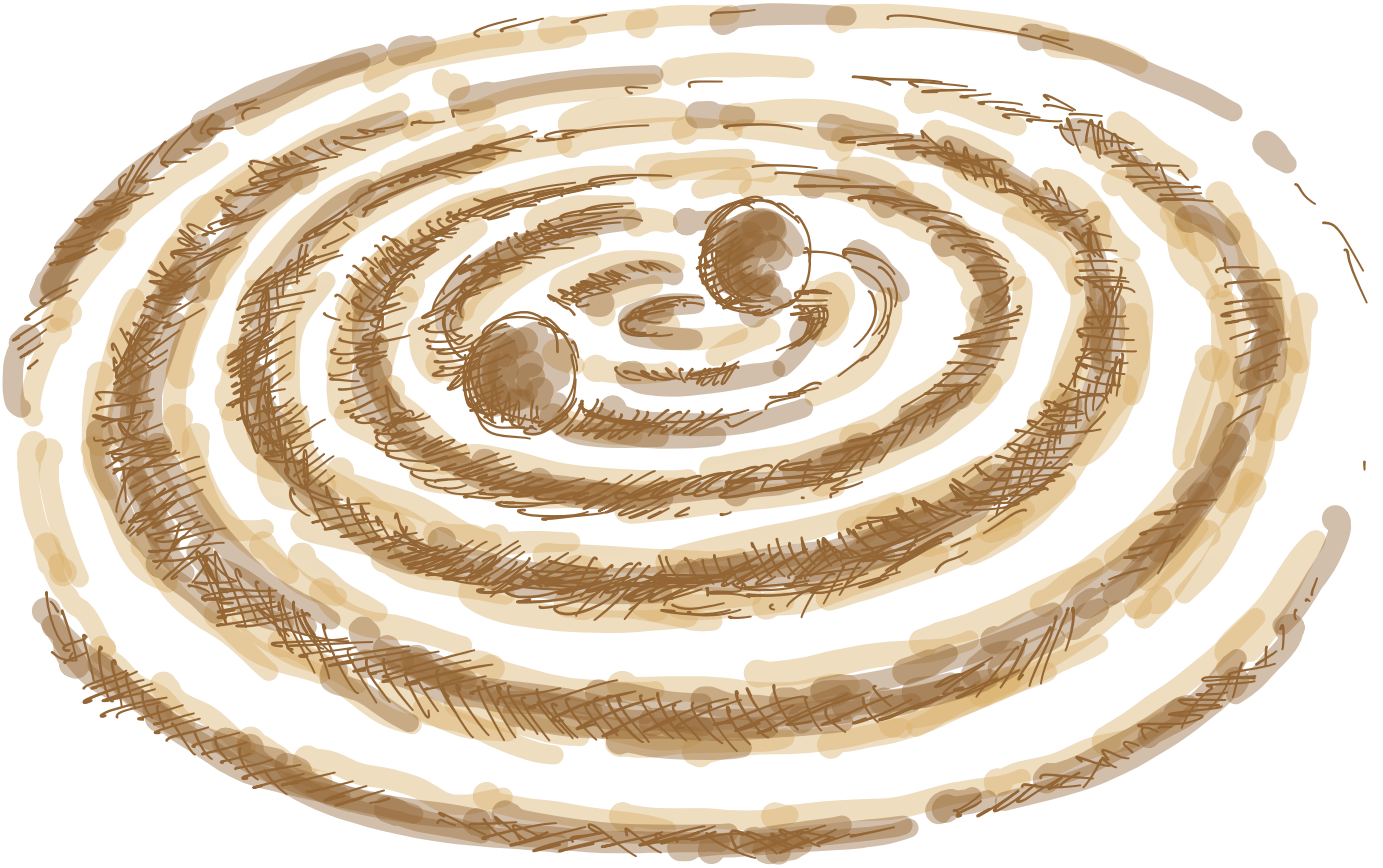


Hawking Radiation



BH Thermodynamics

2015

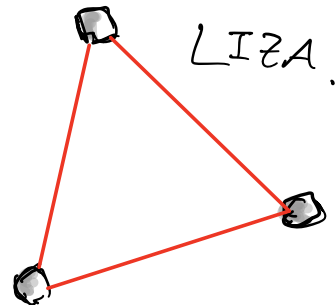
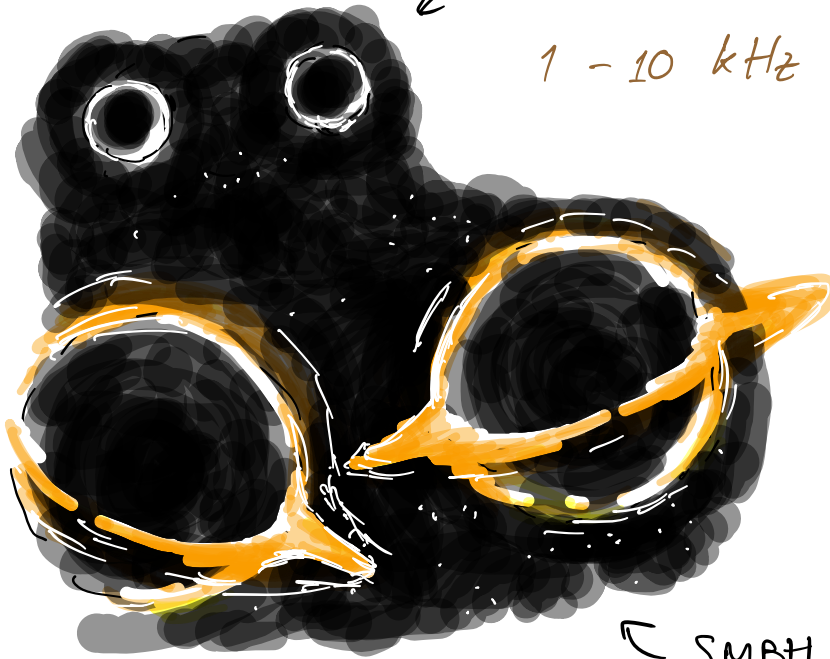


Gravitational Wave

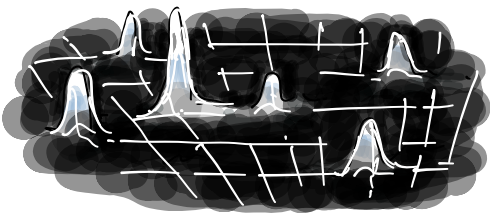


→ Laser interferometer

black holes binary
1 - 10 kHz

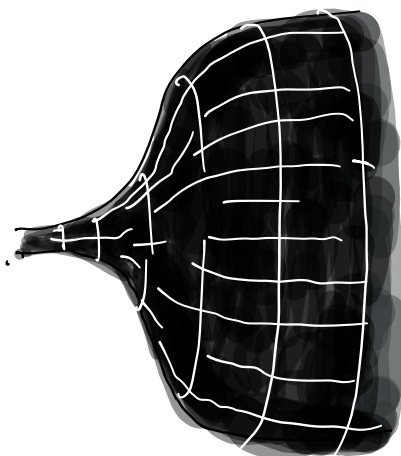


SMBH binary
 10^{-10} - 10^{-3} Hz

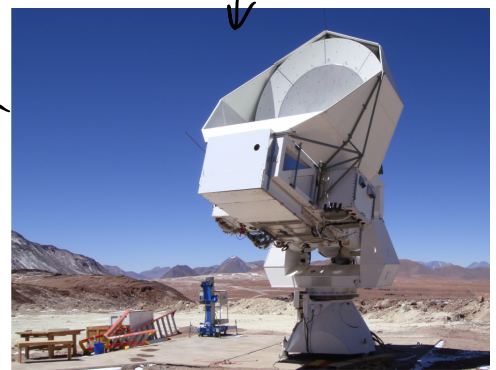


primordial fluctuation
 10^{-16} - 1 Hz

Polar bear



inflation
 $\sim 10^{-16}$ Hz



Multi-Messenger Astronomy

