Title of the Presentation

Jiuru Lyu

Full name of my institution

October 25, 2023

EMORY
UNIVERSITY

Table of Contents

Introduction

Block Title 1

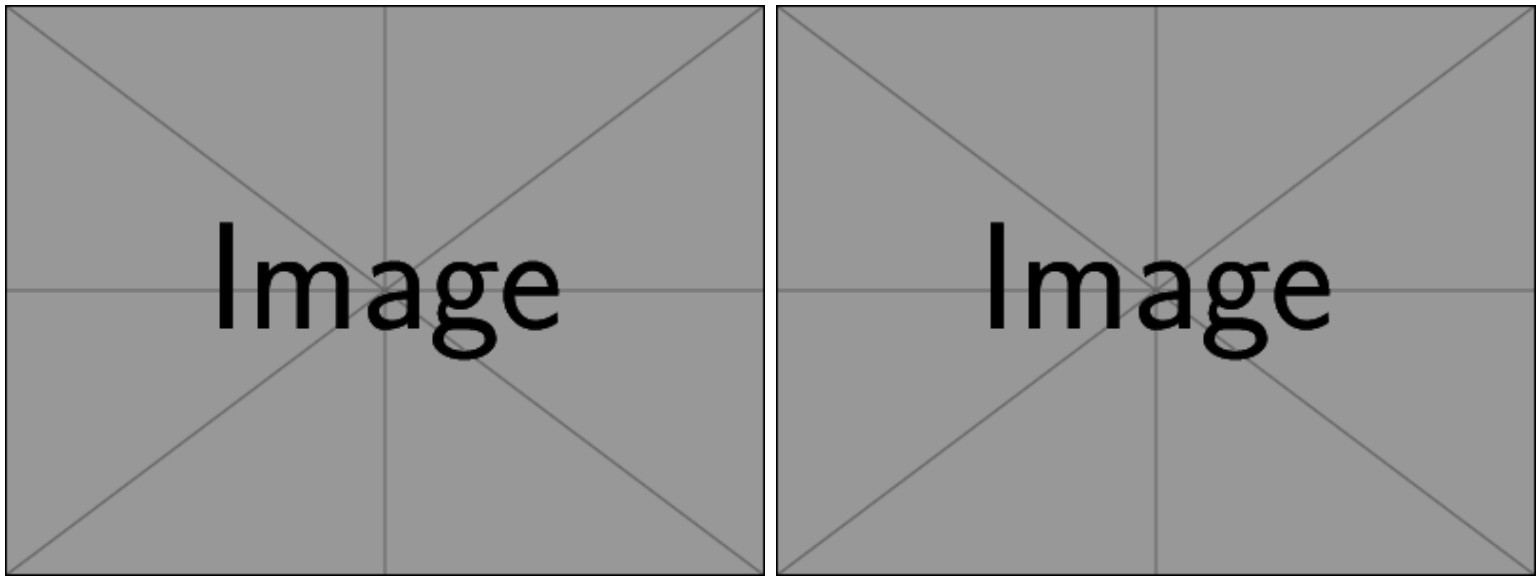
- Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore .
- Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.
- Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur.

Block Title 2

1. Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore .
2. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.
3. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur.

Example of subfigure

$$\text{Idea A} \Longleftrightarrow \text{Idea B}$$



(a) Image Caption (b) Image Caption

Figure 1: This is a caption

Black hole

The metric and the electromagnetic field of the spherically symmetric solution

$$ds^2 = -f dt^2 + \frac{dr^2}{f} + r^2 d\Omega_2^2 , \tag{1}$$

$$F = E dt \wedge dr , \quad E = \frac{Q}{\sqrt{r^4 + Q^2/b^2}} . \tag{2}$$

where

$$\begin{aligned} f =& 1 - \frac{2M}{r} + \frac{r^2}{l^2} + \frac{2b^2}{r} \int_r^\infty \left(\sqrt{r^4 + \frac{Q^2}{b^2}} - r^2 \right) dr \\ =& 1 - \frac{2M}{r} + \frac{r^2}{l^2} + \frac{2b^2 r^2}{3} \left(1 - \sqrt{1 + \frac{Q^2}{b^2 r^4}} \right) \\ &+ \frac{4Q^2}{3r^2} {}_2F_1 \left(\frac{1}{4}, \frac{1}{2}; \frac{5}{4}; -\frac{Q^2}{b^2 r^4} \right) , \end{aligned}$$

and ${}_2F_1$ is the hypergeometry function, M and Q stand for black hole mass and

Content

Mass M

$$f(r_h) = 0 \Longrightarrow M = \frac{T}{v} - \frac{1 - \sqrt{\frac{16}{v^4} + 1}}{4\pi} - \frac{1}{2\pi v^2} \tag{3}$$

Hawking temperature T

$$T = f'(r_+)/4\pi = \frac{1}{4\pi r_+}\left[1 + \frac{3r_+^2}{l^2} + 2b^2 r_+^2\left(1 - \sqrt{1 + \frac{Q^2}{b^2 r_+^4}}\right)\right] \tag{4}$$

Electric potential Φ

$$\Phi = \int_{r_+}^{\infty} E dr = \frac{Q}{r_+}\, {}_2F_1\left(\frac{1}{4}, \frac{1}{2}; \frac{5}{4}; -\frac{Q^2}{b^2 r_+^4}\right). \tag{5}$$

The corresponding entropy is $S = \pi r_+^2$, The specific volume $v = 2r_+ l_P^2$ and corresponding pressure $P = -\frac{\Lambda}{8\pi} = \frac{3}{8\pi l^2}$

Conclusion

Conclusion 1

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.

Conclusion 2

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.

Q & A

Thank You!

EMORY
UNIVERSITY