

# Quantum Field Theory I

Thomas Brosnan

Notes taken in Professor Samson Shatashvili class, Michaelmas Term 2024

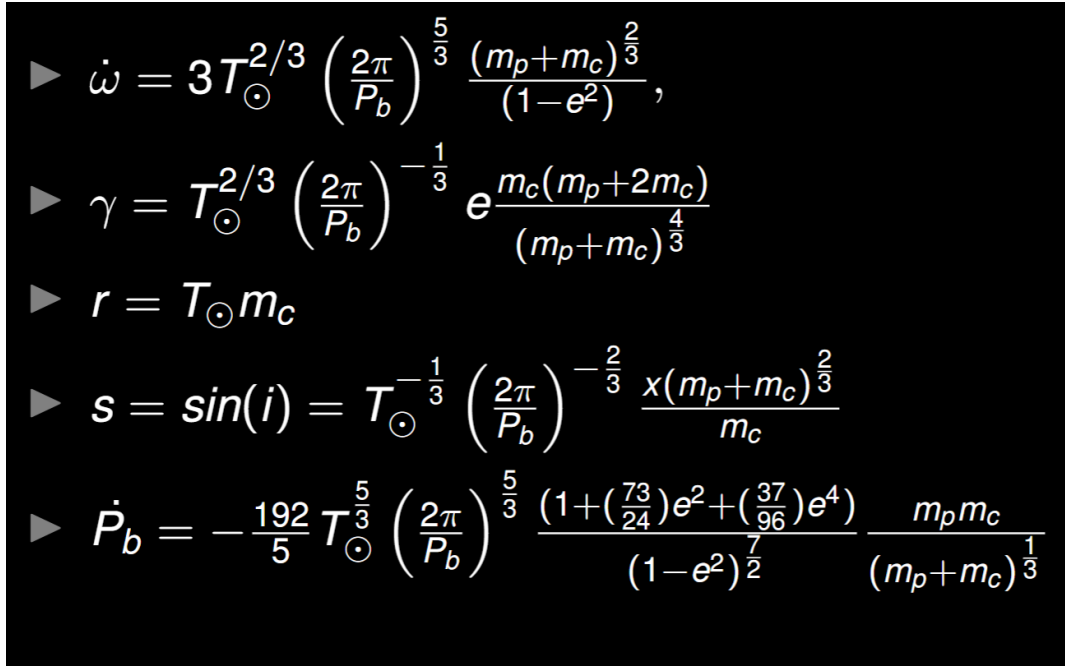
”If you can’t explain it simply enough you don’t understand it well enough”

- Albert Einstein

Contents

1 Section 4

1.1 Theorem: . . . . . 4



$$\begin{aligned}
 \blacktriangleright \quad \dot{\omega} &= 3T_{\odot}^{2/3} \left( \frac{2\pi}{P_b} \right)^{\frac{5}{3}} \frac{(m_p+m_c)^{\frac{2}{3}}}{(1-e^2)}, \\
 \blacktriangleright \quad \gamma &= T_{\odot}^{2/3} \left( \frac{2\pi}{P_b} \right)^{-\frac{1}{3}} e^{\frac{m_c(m_p+2m_c)}{(m_p+m_c)^{\frac{4}{3}}}} \\
 \blacktriangleright \quad r &= T_{\odot} m_c \\
 \blacktriangleright \quad s = \sin(i) &= T_{\odot}^{-\frac{1}{3}} \left( \frac{2\pi}{P_b} \right)^{-\frac{2}{3}} \frac{x(m_p+m_c)^{\frac{2}{3}}}{m_c} \\
 \blacktriangleright \quad \dot{P}_b &= -\frac{192}{5} T_{\odot}^{\frac{5}{3}} \left( \frac{2\pi}{P_b} \right)^{\frac{5}{3}} \frac{(1+(\frac{73}{24})e^2+(\frac{37}{96})e^4)}{(1-e^2)^{\frac{7}{2}}} \frac{m_p m_c}{(m_p+m_c)^{\frac{1}{3}}}
 \end{aligned}$$

Figure 1: *Diagram of the experimental setup circuit*

## 1 Section

### 1.1 Theorem:

let  $A$  be an element of  $R$  such that:

$$\begin{aligned}
 c_i &= \langle \psi | \phi \rangle, & c_i &= \langle \psi | \phi \rangle \\
 c_i &= \langle \psi | \phi \rangle, & c_i &= \langle \psi | \phi \rangle
 \end{aligned} \tag{1.1}$$

Then the final result is:

$$\begin{aligned}
 c_i &= \langle \psi | \phi \rangle, & c_i &= \langle \psi | \phi \rangle \\
 c_i &= \langle \psi | \phi \rangle, & c_i &= \langle \psi | \phi \rangle
 \end{aligned} \tag{1.2}$$

let  $A$  be an element of such that:

$$\frac{1}{2} = 1/2 + 0 - 0 \tag{1.3}$$

