

我的第一个 L^AT_EX 文档

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目录

1 一级标题

1.1 二级标题

这里是正文.

1.2 二级标题

这里是正文.

$$\begin{bmatrix} a & b \\ c & d \end{bmatrix}$$

定理 1.1 (定理名称). 这里是定理的内容.

$$\left(\frac{xdx}{dy} - \frac{ydy}{dx}\right)^2, [\vec{F} = m\vec{a}], \left|\frac{a}{b}\right|, \left\|\frac{a}{b}\right\|, \left\langle\frac{a}{b}\right\rangle \left\{\sqrt{a + \sqrt{a + \sqrt{a}}} \rightarrow \infty\right\}$$

$$\begin{array}{l}
! \quad \int_b^a f'(x)dx = f(b) - f(a) \quad \underbrace{\frac{1}{4}W_{\mu\nu} \cdot W^{\mu\nu} - \frac{1}{4}B_{\mu\nu}B^{\mu\nu} - \frac{1}{4}G_{\mu\nu}^a G_a^{\mu\nu}}_{\text{kinetic energies and self-interactions of the gauge bosons}} \\
\|x+y\| \geq \left| \|x\| - \|y\| \right| \quad \nabla \cdot \mathbf{D} = \rho \text{ and } \nabla \cdot \mathbf{B} = 0 \\
y = \frac{\sum_i w_i y_i}{\sum_i w_i}, i = 1, 2 \dots k \quad \nabla \times \mathbf{E} = -\frac{\partial \mathbf{B}}{\partial t} \text{ and } \nabla \times \mathbf{H} = \mathbf{J} + \frac{\partial \mathbf{D}}{\partial t} \\
\quad \quad \quad e = \lim_{n \rightarrow \infty} \left(1 + \frac{1}{n}\right)^n
\end{array}$$

$$\dot{x}_i = a_i x_{i'} - (d + a_{i0} + a_{i1}) x_i + r x_i (f_i - \phi)$$

$$\left\{ \begin{array}{l} \nabla \cdot \mathbf{D} = \rho_V, \\ \nabla \cdot \mathbf{B} = 0, \\ \nabla \times \mathbf{H} = \mathbf{J} + \frac{\partial \mathbf{D}}{\partial t}, \\ \nabla \times \mathbf{E} = -\frac{\partial \mathbf{B}}{\partial t}. \end{array} \right. \tag{1}$$

$$y^2=x^3+ax+b\tag{2}$$

$$y^2=(x-a)(x-b)(x-c)\tag{3}$$

$$y^2=x^3+ax^2+bx+c\tag{4}$$

$$x^3+y^3=a\tag{5}$$

$$a_{11}x^2+2a_{12}xy+a_{22}y^2+2a_{13}x+2a_{23}y+a_{33}=0\tag{6}$$

$$\left\{ \begin{array}{l} \frac{x^2}{a^2} + \frac{y^2}{b^2} = 1 \\ \frac{x^2}{a^2} - \frac{y^2}{b^2} = 1 \\ y^2 = 2px \end{array} \right. \tag{7}$$

$$e^x = 1 + \frac{1}{1!}x + \frac{1}{2!}x^2 + \frac{1}{3!}x^3 + o(x^3) \quad (8)$$

$$\ln(1+x) = x - \frac{1}{2}x^2 + \frac{1}{3}x^3 + o(x^3) \quad (9)$$

$$\sin x = x - \frac{1}{3!}x^3 + \frac{1}{5!}x^5 + o(x^5) \quad (10)$$

$$\arcsin x = x + \frac{1}{2} \cdot \frac{x^3}{6} + \frac{1 \times 3}{2 \times 4} \cdot \frac{x^5}{40} + \frac{1 \times 3 \times 5}{2 \times 4 \times 6} \cdot \frac{x^7}{1120} + o(x^7) \quad (11)$$

$$\sin x = \sum (-1)^n \frac{(2n+1)!x^{2n+1}}{(2n+1)!}, \quad \forall x \quad (12)$$

$$\cos x = \sum (-1)^n B_{2n} \frac{(4^n)(1-4^n)x^{2n}}{(2n)!} \quad (13)$$

$$\tan x = \sum B_{2n} \frac{(-4)^n(1-4^n)x^{2n-1}}{(2n)!}, \quad \forall x : |x| < \frac{\pi}{2} \quad (14)$$

$$\Omega = \frac{N!}{\prod a_i!} \prod (\omega_i^{a_i}) \quad (5)$$

$$\begin{aligned} \ln \Omega &= \ln(N!) - \sum_i \ln(a_i!) + \sum_i a_i \ln \omega_i \\ &\approx N(\ln N - 1) - \sum_i a_i(\ln a_i - 1) + \sum_i a_i \ln \omega_i \\ &= N \ln N - \sum_i a_i \ln \left(\frac{a_i}{\omega_i} \right) \end{aligned} \quad (15)$$

$$\delta\Omega = 0, \delta^2\Omega < 0 \quad (5)$$

$$\frac{\delta\Omega}{\Omega} = \delta(\ln \Omega) = - \sum_i \ln \left(\frac{a_i}{\omega_i} \right) \delta a_i - \sum_i \ln \left(\frac{a_i}{\omega_i} \right) \delta a_i \quad (6)$$

$$\sum_i \ln \left(\frac{a_i}{\omega_i} \right) \delta a_i = 0 \quad (7)$$

$$\begin{aligned} \chi_{\pm} &= -N_{\text{Rb}} \frac{3\lambda^3}{4\pi^2} \cdot \frac{\Gamma}{\Omega_0} \cdot \frac{1}{\sqrt{\pi}u} \sum_{F_e=0}^2 \sum_{m=-F_g}^{F_g} \frac{C_{1,m}^{F_e,m\pm 1}}{a_{\pm}} \\ &\times \int_{-\infty}^{\infty} dv e^{-(v/u)^2} \langle F_{e,m\pm 1} | \rho_{\text{pr}} | F_{g,m} \rangle, \end{aligned} \quad (4)$$

$$\mathbb{P}\left(\max_{\kappa N \leq k \leq (1-\kappa)N} \pi \sqrt{\frac{\beta}{2}} \cdot \frac{\rho_V(\gamma_k) N (\lambda_k - \gamma_k)}{\log N} \in [1 - \epsilon, 1 + \epsilon]\right) = 1 - o(1) \quad (16)$$

$$U_{n+1}(x) = \begin{bmatrix} V_n & \vec{\Phi}_n^t(x) \\ \vec{\Phi}_n(x) & 0 \end{bmatrix}, \quad \vec{\Phi}_n(x) = [\phi_1(x), \dots, \phi_n(x)] \quad (17)$$

$$B_{\sigma,\kappa}((w,W),(v,V)) = \int_{\Omega} \sigma \nabla w \cdot \nabla v dx + \int_{\partial\Omega} \kappa (W-w)(V-v) dS \quad (18)$$

$$a_j^- = \sqrt{\frac{m\Omega_j}{2\hbar}} \left(X_j + \frac{iP_j}{m\Omega_j} \right), \quad a_j^\dagger = \sqrt{\frac{m\Omega_j}{2\hbar}} \left(X_j - \frac{iP_j}{m\Omega_j} \right) \quad (19)$$

$$= N \ln N - \sum_i a_i \ln \left(\frac{a_i}{\omega_i} \right)$$