LATEX

上下标

a^2, a_1
x^{y+z}, p_{ij}, p_ij
$x_i, x_{\text i}$
$\text{A B}, \text{ABAB}, \text{ABABe}, \text{i}$

代码块

```
a^2,a_1\\
x^{y+z},p_{ij},p_ij\\
x_i,x_{\text i}\\
\text{A B},\rm{A B}\\
\text A B,\rm A B\\
{\rm A} B\\
\text{e},\text{i} \\
```

分式与根式

$\frac{1}{2}, \frac{1}{2},$
$\frac{1}{x+y}$
$\frac{\frac{1}{x}+1}{y+1}$

$\sqrt{2}, \sqrt{x+y}, \sqrt[3]{x}$

代码块

```
\frac{1}{2},\frac 1 2,\\
\frac 1 {x+y}\\
```

```
\frac {\dfrac 1 x + 1}{y + 1}\\
\sqrt 2,\sqrt{x+y},\sqrt[3]x
```

普通运算符

$$
+ -
$$

$$
\times, \cdot, \div
$$

$$
\pm, \mp
$$

$$
>, <, \geq, \leq, \gg, \ll, \neq, \approx, \equiv, \ngeq, \nleq
$$

$$
\cap, \cup, \in, \notin, \subseteq, \subsetneqq, \varnothing, \setminus, \bigodot, \bigotimes, \emptyset
$$

$$
\forall, \exists, \nexists
$$

$$
\because, \therefore
$$

$$
\mathbb{R}, R, Q, \mathbb{N}, \mathbb{Z}_+
$$

$$
\mathcal{F}, \mathscr{F}
$$

$$
\cdots, \vdots, \ddots
$$

$$
\infty, \partial, \partial, \nabla, \propto, ^\circ
$$

$$
\sin x, \sec x, \cosh x
$$

$$
\log_2 x, \ln x, \lg x
$$

$$
\lim_{x \to 0} \frac{x}{\sin x}
$$

$$
\max x
$$

$$
\mathrm{MSE}(x)
$$

$$
\bowtie
$$

代码块

```
+-\\
\times,\cdot,\div\\
\pm,\mp\\
>,<,\ge,\le,\gg,\ll,\ne,\approx,\equiv,\ngeq,\nleq\\
\cap,\cup,\in,\notin,\subseteq,\subsetneqq,\varnothing,\setminus,\bigodot,\bigotimes,\emptyset\\
\forall,\exists,\nexists\\
\because,\therefore\\
```

```
\mathbb R,R,Q,\N,\Z_+\\
\mathcal F,\mathscr F \\

\cdots,\vdots,\ddots

\infty,\partial,∂,\nabla,\propto,\degree

\sin x,\sec x,\cosh x\\
\log_2 x, \ln x,\lg x\\
\lim\limits_{x \to 0} \frac { x}{\sin x}\\
\max x

\text{MSE}(x) \\
\bowtie
```

大型运算符

$$\sum,\prod_{N}$$
$$\sum_{i}^{n},\sum_{i=0}$$
$$\frac{\sum_{i=1}^{n} x_i}{\prod_{i=1}^{n} x_i}$$

$$\int,\iint,\iiint,\oint,\oiint$$
$$\int_{-\infty}^{0} f(x)\,\mathrm{d}x$$

$$a\ a$$
$$a\ a$$
$$a\quad a$$
$$a\qquad a$$

代码块

```
\sum,\prod\\
\sum_i,\sum_{i=0}^N\\
```

```
\frac{\sum\limits_{i=1}^n x_i}{\prod\limits_{i=1}^n x_i}

\int,\iint,\iiint,\oint,\oiint\\
\int_{-\infty}^0 f(x)\,\text d x

a\, a\\
a\ a\\
a\quad a\\
a\qquad a
```

标注符号

$$\vec x,\overrightarrow{AB}$$
$$\bar x,\overline{AB}$$

代码块

```
\vec x,\overrightarrow {AB}\\
\bar x,\overline{AB}
```

箭头

$$\leftarrow,\Rightarrow,\Leftrightarrow,\longleftarrow,\uparrow,\downarrow,\Uparrow,\Downarrow$$

代码块

```
\leftarrow,\Rightarrow,\Leftrightarrow,\longleftarrow,\uparrow,
\downarrow,\Uparrow,\Downarrow
```

括号与定界符

$$
([])\{\}\\
\lceil,\rceil,\lfloor,\rfloor,||\\
\left(0,\frac 1 a\right]\\
\left.\frac {\partial f}{\partial x}\right|_{x=0}\\
\bigg(\qquad \bigg)
$$

代码块

```
([])\{ \}\\
\lceil,\rceil,\lfloor,\rfloor,||\\
\left(0,\frac 1 a\right]\\
\left.\frac {∂f}{∂x}\right|_{x=0}\\
\bigg(\qquad  \bigg)
```

多行公式

$$
\begin{aligned}
a&=b+c+d\\
&=e+f
\end{aligned}
$$

代码块

```
\begin{align}

a&=b+c+d\\
&=e+f

\end{align}
```

大括号

$$f(x) = \begin{cases} \sin x, & -\pi \le x \le \pi \\ 0, & \text{其他} \end{cases}$$

代码块

```
f(x)=

\begin{cases}

\sin x, & -π\le x \le π\\
0,& \text{其他}

\end{cases}
```

矩阵

$$\begin{matrix} a & b & \cdots & c \\ \vdots & \vdots & \ddots & \vdots \\ e & f & \cdots & g \end{matrix}$$

$$\begin{bmatrix} a & b & \cdots & c \\ \vdots & \vdots & \ddots & \vdots \\ e & f & \cdots & g \end{bmatrix} \begin{pmatrix} a & b & \cdots & c \\ \vdots & \vdots & \ddots & \vdots \\ e & f & \cdots & g \end{pmatrix} \begin{vmatrix} a & b & \cdots & c \\ \vdots & \vdots & \ddots & \vdots \\ e & f & \cdots & g \end{vmatrix}$$

$$\mathbf{A}, \mathbf{B}^{\mathrm{T}}$$

代码块

```
\begin{matrix}
a & b & \cdots & c \\
\vdots& \vdots & \ddots & \vdots \\
e & f& \cdots & g
\end{matrix}


\begin{bmatrix}
a & b & \cdots & c \\
```

```
\vdots& \vdots & \ddots & \vdots \\
e & f& \cdots & g
\end{bmatrix}

\begin{pmatrix}
a & b & \cdots & c \\
\vdots& \vdots & \ddots & \vdots \\
e & f& \cdots & g
\end{pmatrix}

\begin{vmatrix}
a & b & \cdots & c \\
\vdots& \vdots & \ddots & \vdots \\
e & f& \cdots & g
\end{vmatrix}


\bf A,\bf B^{\rm T}
```

实战演练

$$f(x) = \frac{1}{\sqrt{2\pi}\sigma}\mathrm{e}^{-\frac{(x-\mu)^2}{2\sigma^2}}$$
$$f(x) = \frac{1}{\sqrt{2\pi}\sigma}\exp\left[-\frac{(x-\mu)^2}{2\sigma^2}\right]$$

$$\lim_{N\to\infty} P\left\{\left|\frac{I\left(\alpha_i\right)}{N} - H(s)\right| < \varepsilon\right\} = 1$$

$$x(n) = \frac{1}{2\pi}\int_{-\pi}^{\pi} X\left(\mathrm{e}^{\mathrm{j}\omega}\right)\mathrm{e}^{\mathrm{j}\omega n}\,\mathrm{d}\omega$$

$$\vec{B}\left(\vec{r}\right) = \frac{\mu_0}{4\pi}\oint_C \frac{I\,\mathrm{d}\vec{l}\times\vec{R}}{R^3} \tag{3}$$
$$= \frac{\mu_0}{4\pi}\int_V \frac{\vec{J}_V\times\vec{R}}{R^3}\,\mathrm{d}V' \tag{4}$$

代码块

```
f(x) = \frac 1 {\sqrt{2\pi} \sigma} {\rm e} ^ {-\frac {(x-\mu)^2}{2\sigma ^ 2}}\\
f(x) = \frac 1 {\sqrt{2\pi} \sigma} \exp \left[ {-\frac {(x-\mu)^2}{2\sigma ^ 2}}\right]

\lim\limits_{N\to \infty} P \left\{ \left| \frac {I\left( \alpha_i \right)}{N} - H(s) \right| < \varepsilon  \right\} = 1

x(n) = \frac 1 {2\pi} \int _{-π} ^ π X\left( {\rm e} ^ {{\rm j} \omega } \right) {\rm e} ^ {{\rm j} \omega n} \, {\rm d}\omega\\

\begin{align}

\vec B \left( \vec r \right) &= \frac {\mu_0}{4\pi}\oint_C \frac {I \, {\rm d} \vec l \times \vec R}{R^3}\\

&= \frac {\mu_0}{4\pi} \int_V \frac{\vec J_V \times \vec R}{R^3}\, {\rm d} V'

\end{align}
```

补充

$$
\begin{gathered}
xy,\quad 紧凑xy \\
\vee,\wedge \\
\infty,\imath,\jmath \\
\overbrace{12345},\underbrace{12345} \\
\vec{x} \stackrel{\mathrm{def}}{=} x_1,\dots,x_n
\end{gathered} \tag{1}
$$

代码块

```
\tag{1}
xy ,\quad 紧凑x\!y \\
\vee , \wedge \\
\infty,\imath,\jmath\\
\overbrace{12345},\underbrace{12345}\\
\vec{x}\stackrel{\mathrm{def}}{=}{x_1,\dots,x_n}
```

字母表

$$
\begin{array}{lllll}
\Alpha(\alpha), & \Beta(\beta), & \Gamma(\gamma), & \Delta(\delta), & E(\epsilon), \\
Z(\zeta), & H(\eta), & \Theta(\theta), & I(\iota), & K(\kappa), \\
\Lambda(\lambda), & M(\mu), & N(\nu), & \Xi(\xi), & O(o), \\
\Pi(\pi), & P(\rho), & \Sigma(\sigma), & T(\tau), & \Upsilon(\upsilon), \\
\Phi(\phi), & X(\chi), & \Psi(\psi), & \Omega(\omega), & \varpi
\end{array}
$$

代码块

```
\Alpha(\alpha),     \Beta(\beta),     \Gamma(\gamma),     \Delta(\delta),     E(\epsilon),\\
Z(\zeta),           H(\eta),          \Theta(\theta),     I(\iota),           K(\kappa),\\
\Lambda(\lambda),   M(\mu),           N(\nu),             \Xi(\xi),           O(\omicron),\\
\Pi(\pi),           P(\rho),          \Sigma(\sigma),     T(\tau),            \Upsilon(\upsilon),\\
\Phi(\phi),         X(\chi),          \Psi(\psi),         \Omega(\omega),     \varpi\\
```