0.MARKDOWN_TEMPLATE

色

Red

```
<font color="red">Red</font>
```

blue

```
<font color="blue">blue</font>
```

green

```
<font color="green">green</font>
```

darkPink

```
<font color="darpink">darkPink</font>
```

数式

ギリシャ文字

α: ¥alpha　ϵ: ¥epsilon　φ: ¥varphi

フラクトゥール

$$\mathfrak{B}$$

分数

$$\frac{A}{B}$$

```
\begin{eqnarray}
\frac{A}{B}
\end{eqnarray}
```

微分

$$\frac{\partial y}{\partial x}$$

```
\begin{eqnarray}
\frac{\partial y}{\partial x}
\end{eqnarray}
```

0

$$\frac{d y}{d x}$$

```
\begin{eqnarray}
\frac{d y}{d x}
\end{eqnarray}
```

積分

$$\overline{A}:=\frac{1}{L}\int_0^L Adx$$

```
\begin{eqnarray}
\overline{A}:=\frac{1}{L}\int_0^L Adx
\end{eqnarray}
```

重積分

$$\iint dx \quad \iiint dx$$

$$\text{IVT}:=\int_{p_s}^{100 hPa} u q_v \,dp \tag{1}$$

```
\begin{eqnarray}
\text{IVT}:=\int_{p_s}^{100 hPa} u q_v \,dp
\end{eqnarray}
\tag{1}
```

アンダーブレース

$$\underbrace{A}_{\text{実際の値}} = \underbrace{\overline{A}}_{\text{平均}} + \underbrace{A'}_{\text{偏差}}$$

```
\begin{eqnarray}
\underbrace{A}_{実際の値}=\underbrace{\overline{A}}_{平均}+\underbrace{A'}_{偏差}
\end{eqnarray}
```

行列

$$\boldsymbol{A}=\begin{pmatrix} a & b \\ c & d \end{pmatrix} \qquad \begin{bmatrix} a & b \\ c & d \end{bmatrix} \qquad \begin{bmatrix} a & b \\ c & d \end{bmatrix}$$

```
\boldsymbol{A}=\begin{pmatrix}
a & b \\
c & d \\
\end{pmatrix}
\qquad
\begin{bmatrix}
a & b \\
c & d \\
\end{bmatrix}
\qquad
\begin{bmatrix}
a & b \\ c & d \\
\end{bmatrix}
```

行列式

$$\begin{vmatrix} 0 & -2 \\ -2 & 0 \end{vmatrix}$$

```
\begin{vmatrix}
0 & -2 \\
-2 & 0 \\
\end{vmatrix}
```

サイズの大きい行列

$$A=\begin{bmatrix} a_{11} & a_{12} & \cdots & a_{1n} \\ a_{21} & a_{22} & \cdots & a_{2n} \\ \vdots & \vdots & & \vdots \\ a_{m1} & a_{m2} & \cdots & a_{mn} \end{bmatrix}$$

```
A=
\begin{bmatrix}
a_{11} & a_{12} & \cdots & a_{1n} \\
a_{21} & a_{22} & \cdots & a_{2n} \\
\vdots & \vdots & & \vdots  \\
a_{m1} & a_{m2}& \cdots & a_{mn} \\
\end{bmatrix}
```

https://mathlandscape.com/latex-matrix/

$$\left.\begin{bmatrix} a_{11} & a_{12} & \dots & a_{1n} \\ a_{21} & a_{22} & \dots & a_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ a_{n1} & a_{n2} & \dots & a_{nn} \end{bmatrix}\right\} = n\text{個}$$

```
\begin{eqnarray}
\left.
\begin{bmatrix}
 a_{11} & a_{12} & \dots & a_{1n} \\
 a_{21} & a_{22} & \dots & a_{2n} \\
 \vdots & \vdots & \ddots & \vdots \\
 a_{n1} & a_{n2} & \dots & a_{nn}
\end{bmatrix}
\right\}
 = n個
\end{eqnarray}
```

http://xyoshiki.web.fc2.com/tex/form0121.html

$$\mathbf{e}_1 := \left. \begin{bmatrix} 1 \\ 0 \\ \vdots \\ 0 \end{bmatrix} \right\} = n個$$

```
\mathbf{e}_1:=
\left.
\begin{bmatrix}
1 \\
0 \\
\vdots   \\
0 \\
\end{bmatrix}
\right\}
 = n個
```

$$A = \underset{m\times n}{(a_{ij})} = \left. \underbrace{\begin{bmatrix} a_{11} & a_{12} & \dots & a_{1n} \\ a_{21} & a_{22} & \dots & a_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ a_{m1} & a_{m2} & \dots & a_{mn} \end{bmatrix}}_{n \text{ columns}} \right\} m \text{ rows}$$

```
\begin{equation*}
% a disposable command for avoiding repetitions
\newcommand{\zm}{%
  \begin{bmatrix}
    a_{11} & a_{12} & \dots & a_{1n}\\
    a_{21} & a_{22} & \dots & a_{2n}\\
    \vdots & \vdots & \ddots & \vdots\\
    a_{m1} & a_{m2} & \dots & a_{mn}\\
  \end{bmatrix}%
}
A=\underset{m\times n}{(a_{ij})}=
  \left.
  \,\smash[b]{\underbrace{\!\zm\!}_{\textstyle\text{$n$ columns}}}\,
  \right\}\text{$m$ rows}
  \vphantom{\underbrace{\zm}_{\text{$n$ columns}}}
\end{equation*}
```

https://tex.stackexchange.com/questions/644625/how-can-i-have-both-horizontal-and-vertical-curly-braces-in-a-matrix

$$\begin{bmatrix}
\sigma_1 & 0 & \dots & 0 & \dots & 0\\
0 & \sigma_2 & \dots & 0 & \dots & 0\\
\vdots & \vdots & \ddots & \vdots & \ddots & \vdots\\
0 & \dots & \dots & \sigma_N & \dots & 0\\
0 & 0 & \dots & 0 & \dots & 0\\
\vdots & \vdots & \ddots & \vdots & \dots & \vdots\\
0 & 0 & \dots & 0 & \dots & 0
\end{bmatrix}$$

```
\begin{eqnarray}
\begin{bmatrix}
\begin{array}{cccc}
  \sigma_1 & 0        & \dots  & 0       & \dots   & 0\\
  0        & \sigma_2 & \dots  & 0 & \dots   &  0\\
  \vdots   & \vdots & \ddots & \vdots & \ddots   & \vdots\\
  0        & \dots  & \dots & \sigma_N & \dots   & 0\\
  0        & 0      & \dots  & 0       & \dots & 0\\
  \vdots   & \vdots & \ddots & \vdots & \dots   & \vdots\\
  0        & 0      & \dots  & 0      & \dots   & 0\\
\end{array}
\end{bmatrix}\\
\end{eqnarray}
```

連立方程式

$$\left\{
\begin{aligned}
x = a + b \\
y = c + d
\end{aligned}
\right.$$

```
\left\{
   \begin{align*}
      x = a + b \\
      y = c + d
   \end{align*}
\right.
```

$$\left.\begin{aligned}P_0(s)=&\;1 \qquad\\ \\ P_1(s)=&\;s \qquad\\ \\ P_2(s)=&\;\frac{1}{2}(3s^2-1) \qquad\\ \\ P_3(s)=&\;\frac{1}{2}(5s^3-3s) \qquad\\ \\ P_4(s)=&\;\frac{1}{8}(35s^4-30s^2+3) \qquad\\ \\ P_6(s)=&\;\frac{1}{8}(63s^5-70s^3+15s) \qquad\end{aligned}\right\}\tag{7.19}$$

```
\left.
\begin{align}
P_0(s)=&\;1 \qquad\\
\\
P_1(s)=&\;s \qquad\\
\\
P_2(s)=&\;\frac{1}{2}(3s^2-1) \qquad\\
\\
P_3(s)=&\;\frac{1}{2}(5s^3-3s) \qquad\\
\\
P_4(s)=&\;\frac{1}{8}(35s^4-30s^2+3) \qquad\\
\\
P_6(s)=&\;\frac{1}{8}(63s^5-70s^3+15s) \qquad
\end{align}
\right\}\tag{7.19}
```

$$\lim_{\epsilon\to 0}\rho_\epsilon(\boldsymbol{x})=\begin{cases}+\infty; & \boldsymbol{x}=\mathbf{0}\\ 0; & \boldsymbol{x}\ne\mathbf{0}\end{cases}\tag{2.170}$$

```
\delta_{ij}=\left\{
   \begin{align*}
      1  \quad (i=j) \\
      0  \quad (i\ne j)
   \end{align*}
\right.
```

$$\delta_{ij} = \begin{cases} 1 & (i=j) \\ 0 & (i \ne j) \end{cases}$$

```
\lim_{\epsilon\to 0} \rho_\epsilon(\boldsymbol{x})=
\left\{
   \begin{align*}
      +\infty ; \quad \boldsymbol{x} = \boldsymbol{0} \\
      0 ; \quad \boldsymbol{x} \ne \boldsymbol{0}
   \end{align*}
\right.
\tag{2.170}
```

$$\langle \varphi_j, \varphi_k \rangle = \delta_{jk} = \begin{cases} 1 & (j=k), \\ 0 & (j \ne k). \end{cases}$$

```
\langle \varphi_j, \varphi_k\rangle=\delta_{jk}=\left\{
   \begin{align*}
      1  \quad (j=k), \\
      0  \quad (j\ne k).
   \end{align*}
\right.
```

$$\left. \begin{aligned} a=1 \quad \\ \\ a=2 \quad \end{aligned} \right\} \tag{11.4a,b}$$

```
\left.
\begin{align*}
a=1 \quad\\
\\
a=2 \quad \\
\end{align*}
\right\}
\tag{11.4a,b}
```

論理記号

```
⟹   \implies
⟸   \impliedby
⟺   \iff
```

運動方程式

$$m \frac{d \mathbf{v}}{dt}=\mathbf{F}$$

```
\begin{eqnarray}
m \frac{d \mathbf{v}}{dt}=\mathbf{F}
\end{eqnarray}
```

$$\begin{aligned}\rho\frac{du}{dt} &= F_x\\ \rho\frac{dv}{dt} &= F_y \\ \rho\frac{dw}{dt} &= F_z\end{aligned} \tag{1}$$

```
\begin{eqnarray}
 \rho\frac{du}{dt} &=& F_x\\
 \rho\frac{dv}{dt} &=& F_y \\
 \rho\frac{dw}{dt} &=& F_z \\
\end{eqnarray} \tag{1}
```

プリュームモデル

$$w_c\frac{\partial s_c}{\partial z} = L_v c - \epsilon W_c(s_c - s_e) \tag{1}$$

$$w_c\frac{\partial q_{v,c}}{\partial z} = c - \epsilon W_c(s_{v,c} - s_{v,e}) \tag{2}$$

$$w_c\frac{\partial q_{l,c}}{\partial z} = c - G\epsilon - W_c q_{l,c} \tag{3}$$

```
\begin{eqnarray}
w_c \frac{\partial s_c}{\partial z}&=&L_vc-\epsilon W_c(s_c-s_e) \tag{1}\\
w_c \frac{\partial q_{v,c}}{\partial z}&=& c-\epsilon W_c(s_{v,c}-s_{v,e}) \tag{2}
\\
w_c \frac{\partial q_{l,c}}{\partial z}&=& c -G \epsilon - W_c q_{l,c} \tag{3}\\
\end{eqnarray}
```

収支式

$$d\bigg(\frac{\partial h_b}{\partial t} + \mathbf{V}_h\cdot\nabla h_b \bigg)=F_h-(M_d+w_e)(h_b-h_m)-\dot{Q}_b d \tag{2}$$

```
\begin{eqnarray}
d\bigg(\frac{\partial h_b}{\partial t} + \mathbf{V}_h\cdot\nabla h_b \bigg)=F_h-
(M_d+w_e)(h_b-h_m)-\dot{Q_b}d
\tag{2}
\end{eqnarray}
```

Q1, Q2 of Yanai et al. (1973)

$$Q_1:=-\frac{\partial \overline{ q" \omega"}}{\partial p}+Q_R-L(c-e) \quad \bigg(=\frac{\partial \overline{q}}{\partial t}+\nabla\cdot\overline{s\mathbf{v}}+\frac{\partial \overline {s \omega}}{\partial p} \bigg) \tag{1}$$

```
\begin{eqnarray}
Q_1:=-\frac{\partial \overline{ q" \omega"}}{\partial p}+Q_R-L(c-e) \quad \bigg(=
\frac{\partial \overline{q}}{\partial t}+\nabla\cdot
\overline{s\mathbf{v}}+\frac{\partial \overline {s \omega}}{\partial p} \bigg)
\tag{1}
\end{eqnarray}
```

$$Q_2:=L\frac{\partial \overline{ q" \omega"}}{\partial p}+L(c-e) \quad \bigg(=-L\bigg[\frac{\partial \overline{q}}{\partial t}+\nabla\cdot\overline{q\mathbf{v}}+\frac{\partial \overline {q \omega}}{\partial p}\bigg] \bigg) \tag{2}$$

```
\begin{eqnarray}
Q_2:=L\frac{\partial \overline{ q" \omega"}}{\partial p}+L(c-e) \quad \bigg(= -
L\bigg[\frac{\partial \overline{q}}{\partial t}+\nabla\cdot
\overline{q\mathbf{v}}+\frac{\partial \overline {q \omega}}{\partial p}
\bigg]\bigg)
\tag{2}
\end{eqnarray}
```

移流項

$$u\frac{\partial u}{\partial x}+v\frac{\partial u}{\partial y}=\frac{\partial (uu)}{\partial x}+\frac{\partial (uv)}{\partial y} \tag{3}$$

```
\begin{eqnarray}
u\frac{\partial u}{\partial x}+v\frac{\partial u}{\partial y}
=\frac{\partial (uu)}{\partial x}+\frac{\partial (uv)}{\partial y}\\
\end{eqnarray}
\tag{3}
```

温度風

$fu=-\partial \phi / \partial y$

```
fu=-\partial \phi / \partial y
```

$dp=-\rho g dz$

```
dp=-\rho g dz
```

$\partial \phi/\partial p=-\alpha$

```
\partial \phi/\partial p=-\alpha
```

$$f\frac{\partial u}{\partial p}=-\frac{\partial}{\partial y}\bigg({\frac{\partial \phi}{\partial p}} \bigg)=\frac{\partial \alpha}{\partial y}$$

```
\begin{eqnarray}
f\frac{\partial u}{\partial p}=-\frac{\partial}{\partial y}\bigg({\frac{\partial
\phi}{\partial p}} \bigg)=\frac{\partial \alpha}{\partial y}
\end{eqnarray}
```

$y=a\phi$を用いると,

$$\frac{\partial u}{\partial p}=\frac{1}{af}\frac{\partial \alpha}{\partial \phi}$$

```
\begin{eqnarray}
\frac{\partial u}{\partial p}=\frac{1}{af}\frac{\partial \alpha}{\partial \phi}
\end{eqnarray}
```

レイアウト

改行

```
<\br >
```

改ページ

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<div class="page-break"></div>
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