性能测试

Image	ours	SimpleTex	阿里达摩院	pix2text	新东方
$\prod_{j=1}^{n} G(i,j)^{1/n} = \prod_{k=1}^{n}\prod_{j=1}^{n} {x_k}^{a_k(i,j)/n} = \prod_{k=1}^{i} {x_k}^{1/i} = \sqrt[i]{x_1x_2\cdots x_i}.$	$\prod_{j=1}^{n} G(i,j)^{1/n} = \prod_{k=1}^{n}\prod_{j=1}^{n} {x_k}^{a_k(i,j)/n} = \prod_{k=1}^{i} {x_k}^{1/i} = \sqrt[i]{x_1x_2\cdots x_i}.$	$\prod_{j=1}^{n} G(i,j)^{1/n} = \prod_{k=1}^{n}\prod_{j=1}^{n} {x_k}^{a_k(i,j)/n} = \prod_{k=1}^{i} {x_k}^{1/i} = \sqrt[i]{x_1x_2\cdots x_i}.$	$\prod_{j=1}^{n} \mathrm{G(i,j)}^{1/n} = \prod_{k=1}^{n}\prod_{j=1}^{n} \mathrm{x_k}^{a_k(i,j)/n} = \prod_{k=1}^{i} \mathrm{x_k}^{1/i} = \sqrt[i]{\mathrm{x_1x_2\cdots x_i}}.$	$\prod_{j=1}^{n} G(i,j)^{1/n} = \prod_{k=1}^{n}\prod_{j=1}^{n} {x_k}^{a_k(i,j)/n} = \prod_{k=1}^{i} {x_k}^{1/i} = \sqrt[i]{x_1x_2\cdots x_i}.$	$/n = \prod_{k=1j=1}^{n} x_k a_k\,(ij)\,/n = \prod_{k=1}^{i} x_k^n/i = \sqrt[3]{x_1x_2\cdots x_i}$
$\frac{1}{n}\sum_{j=1}^{n} H(i,j)^{-1} = \frac{1}{n}\sum_{k=1}^{n}\sum_{j=1}^{n} a_k(i,j){x_k}^{-1} = \frac{1}{n}\sum_{k=1}^{n}{x_k}^{-1}\sum_{j=1}^{n}a_k(i,j) = \frac{1}{i}\sum_{k=1}^{i}{x_k}^{-1}$	$\frac{1}{n}\sum_{j=1}^{n} H(i,j)^{-1} = \frac{1}{n}\sum_{k=1}^{n}\sum_{j=1}^{n} a_k(i,j)x_k^{-1} = \frac{1}{n}\sum_{k=1}^{n}x_k^{-1}\sum_{j=1}^{n}a_k(i,j) = \frac{1}{i}\sum_{k=1}^{i}x_k^{-1}$	$\frac{1}{n}\sum_{j=1}^{n} H(i,j)^{-1} = \frac{1}{n}\sum_{k=1}^{n}\sum_{j=1}^{n} a_k(i,j)x_k^{-1} = \frac{1}{n}\sum_{k=1}^{n}x_k^{-1}\sum_{j=1}^{n}a_k(i,j) = \frac{1}{i}\sum_{k=1}^{i}x_k^{-1}$	$\frac{1}{n}\sum_{j=1}^{n} H\,(i,j)^{-1} = \frac{1}{n}\sum_{k=1}^{n}\sum_{j=1}^{n} a_k\,(i,j)\,x_k^{-1} = \frac{1}{n}\sum_{k=1}^{n}x_k^{-1}\sum_{j=1}^{n}a_k\,(i,j) = \frac{1}{i}\sum_{k=1}^{i}x_k^{-1}$	$\frac{1}{n}\sum_{j=1}^{n} H(i,j)^{-1} = \frac{1}{n}\sum_{k=1}^{n}\sum_{j=1}^{n} a_k(i,j)x_k^{-1} = \frac{1}{n}\sum_{k=1}^{n}x_k^{-1}\sum_{j=1}^{n}a_k(i,j) = \frac{1}{i}\sum_{k=1}^{i}x_k^{-1}$	✗
$a_k(i,j) = \binom{n-i}{j-k}\binom{i-1}{k-1}\Big/\binom{n-1}{j-1} = \frac{(n-i)!(n-j)!(i-1)!(j-1)!}{(n-1)!(k-1)!(n-i-j+k)!(i-k)!(j-k)!}$	$a_k(i,j) = \binom{n-i}{j-k}\binom{i-1}{k-1}\Big/\binom{n-1}{j-1} = \frac{(n-i)!(n-j)!(i-1)!(j-1)!}{(n-1)!(k-1)!(n-i-j+k)!(i-k)!(j-k)!}$	$a_k(i,j) = \binom{n-i}{j-k}\binom{i-1}{k-1}\Big/\binom{n-1}{j-1} = \frac{(n-i)!(n-j)!(i-1)!(j-1)!}{(n-1)!(k-1)!(n-i-j+k)!(i-k)!(j-k)!}$	$a_k\,(i,j) = \binom{n-i}{j-k}\binom{i-1}{k-1}\Big/\binom{n-1}{j-1} = \frac{(n-i)!\,(n-j)!\,(i-1)!\,(j-1)!}{(n-1)!\,(k-1)!\,(n-i-j+k)!\,(i-k)!\,(j-k)!}$	$a_k(i,j) = \binom{n-i}{j-k}\binom{i-1}{k-1}\Big/\binom{n-1}{j-1} = \frac{(n-i)!(n-j)!(i-1)!(j-1)!}{(n-1)!(k-1)!(n-i-j+k)!(i-k)!(j-k)!}$	✗
$\left(x_1\cdot\frac{x_1+x_2}{2}\cdots\frac{x_1+x_2+\cdots x_n}{n}\right)^{1/n} \ge \frac{1}{n}(x_1+\sqrt{x_1x_2}+\cdots+\sqrt[n]{x_1x_2\cdots x_n})$	$\left(x_1\cdot\frac{x_1+x_2}{2}\cdots\frac{x_1+x_2+\cdots x_n}{n}\right)^{1/n} \ge \frac{1}{n}(x_1+\sqrt{x_1x_2}+\cdots+\sqrt[n]{x_1x_2\cdots x_n})$	$\left(x_1\cdot\frac{x_1+x_2}{2}\cdots\frac{x_1+x_2+\cdots x_n}{n}\right)^{1/n} \ge \frac{1}{n}(x_1+\sqrt{x_1x_2}+\cdots+\sqrt[n]{x_1x_2\cdots x_n})$	$\left(x_1\cdot\frac{x_1+x_2}{2}\cdots\frac{x_1+x_2+\cdots x_n}{n}\right)^{1/n} \ge \frac{1}{n}(x_1+\sqrt{x_1x_2}+\cdots+\sqrt[n]{x_1x_2\cdots x_n})$	`\left( x_{1} \cdot{\frac{x_{1}+x_{2}} {2}} \cdots{\frac{x_{1}+x_{2}+\cdots x_{n}} {n`	✗
$v_k = \begin{cases} 0^{r_k}, & \text{if } 0\le r_k\le P,\\ \omega0^{r_k-1}, & \text{if } P<r_k<d_{k-1}.\end{cases}$	$v_k = \begin{cases} 0^{r_k}, & \text{if } 0\le r_k\le P,\\ \omega0^{r_k-1}, & \text{if } P<r_k<d_{k-1}.\end{cases}$	$v_k = \begin{cases} 0^{r_k}, & \text{if } 0\le r_k\le P,\\ \omega0^{r_k-1}, & \text{if } P<r_k<d_{k-1}.\end{cases}$	$\mathrm{v_k} = \{ {}^{0^{r_k},}_{\omega0^{r_k-1},} \quad \text{if } \mathrm{P} < \mathrm{r_k} < \mathrm{d_{k-1}}. \qquad \text{if } 0 \leqslant \mathrm{r_k} \leqslant \mathrm{P},$	$v_k = \begin{cases} 0^{r_k}, & \text{if } 0\le r_k\le P,\\ \omega0^{r_k-1}, & \text{if } P<r_k<d_{k-1}.\end{cases}$	$v_k = \begin{cases} 0^{rk,} & if0\le r_k\le P,\\ \omega0^{rk-1}, & ifP<r_k<d_{k-1}.\end{cases}$

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$\hat{\beta} = (\underbrace{\mathbf{Z}_X^\top \mathbf{Z}_X + \lambda \mathbf{I}_R}_{\mathbf{A}})^{-1}\mathbf{Z}_X^\top \mathbf{y}.$	$\hat{\beta} = (\underbrace{\mathbf{Z}_X^\top \mathbf{Z}_X + \lambda \mathbf{I}_R}_{\mathbf{A}})^{-1}\mathbf{Z}_X^\top \mathbf{y}.$	$\hat{\beta} = (\underbrace{\mathbf{Z}_X^\top \mathbf{Z}_X + \lambda \mathbf{I}_R}_{\mathbf{A}})^{-1}\mathbf{Z}_X^\top \mathbf{y}.$	$\hat{\beta} = \left(\underbrace{\mathbf{Z}_X^\top \mathbf{Z}_X + \lambda \mathbf{I}_R}_{\mathbf{A}}\right)^{-1}\mathbf{Z}_X^\top \mathbf{y}.$	$\hat{\beta} = (\underbrace{\mathbf{Z}_X^\top \mathbf{Z}_X + \lambda \mathbf{I}_R}_{\mathbf{A}})^{-1}\mathbf{Z}_X^\top \mathbf{y}.$	❌
$\mathbb{E}[\mathbf{f}_*] = \mathbf{K}_{X_*,X}\overbrace{[\sigma^2\mathbf{I}+\mathbf{K}_{X,X}]^{-1}\mathbf{y}}^{\beta},$	$\mathbb{E}[\mathbf{f}_*] = \mathbf{K}_{X_*,X}\overbrace{[\sigma^2\mathbf{I}+\mathbf{K}_{X,X}]^{-1}\mathbf{y}}^{\beta},$	$\mathbb{E}[\mathbf{f}_*] = \mathbf{K}_{X_*,X}\overbrace{[\sigma^2\mathbf{I}+\mathbf{K}_{X,X}]^{-1}\mathbf{y}}^{\beta},$	$\mathbb{E}[\mathbf{f}_*] = \mathbf{K}_{X_*,X}\overbrace{[\sigma^2\mathbf{I}+\mathbf{K}_{X,X}]^{-1}\mathbf{y}}^{\beta}$	$\mathbb{E}[\mathbf{f}_*] = \mathbf{K}_{X_*,X}\overbrace{\mathbf{I}+\mathbf{K}_{X,X}}^{\beta}\mathbf{y}_{\mathbf{I}},$	❌
$\omega_{\bar{z}^i\bar{t}} = \frac{1}{\lvert\bar{I}_r\bar{\gamma}\rvert}\textstyle\sum_{\omega_{\bar{z}^i}\in\bar{I}_r}\omega_{\bar{z}^i} - \frac{1}{\lvert\bar{I}_{r_i}\bar{\gamma}\rvert}\textstyle\sum_{\omega_{\bar{z}^i}\in\bar{I}_{r_i}}\omega_{\bar{k}^i}.$	$\omega_{\bar{z}^i\bar{t}} = \frac{1}{\lvert\bar{I}_r\bar{\gamma}\rvert}\textstyle\sum_{\omega_{\bar{z}^i}\in\bar{I}_r}\omega_{\bar{z}^i} - \frac{1}{\lvert\bar{I}_{r_i}\bar{\gamma}\rvert}\textstyle\sum_{\omega_{\bar{z}^i}\in\bar{I}_{r_i}}\omega_{\bar{k}^i}.$	$\omega_{\bar{z}^i\bar{t}} = \frac{1}{\lvert\bar{I}_r\bar{\gamma}\rvert}\sum\limits_{\omega_{\bar{z}^i}\in\bar{I}_r}\omega_{\bar{z}^i} - \frac{1}{\lvert\bar{I}_{r_i}\bar{\gamma}\rvert}\sum\limits_{\omega_{\bar{z}^i}\in\bar{I}_{r_i}}\omega_{\bar{k}^i}.$	$\omega_{\bar{z}^i\bar{t}} = \frac{1}{\lvert\bar{I}_r\bar{\gamma}\rvert}\sum\limits_{\omega_{\bar{z}^i}\in\bar{I}_r}\omega_{\bar{z}^i} - \frac{1}{\lvert\bar{I}_{r_i}\bar{\gamma}\rvert}\sum\limits_{\omega_{\bar{z}^i}\in\bar{I}_{r_i}}\omega_{\bar{k}^i}.$	$\omega_{\bar{z}^i\bar{t}} = \frac{1}{\lvert\bar{I}_r\bar{\gamma}\rvert}\sum\limits_{\omega_{\bar{z}^i}\in\bar{I}_r}\omega_{\bar{z}^i} - \frac{1}{\lvert\bar{I}_{r_i}\bar{\gamma}\rvert}\sum\limits_{\omega_{\bar{z}^i}\in\bar{I}_{r_i}}\omega_{\bar{k}^i}.$	$\omega_{z_i\bar{t}} = \frac{1}{\lvert I_r\gamma\rvert}\sum\limits_{w_i\in I_r}\omega_{zi} - \frac{1}{\lvert I_{ri}\gamma\rvert}\sum\limits_{\omega_i\in I_{r_i}}\omega_{i}$
$\mathbf{z}(\mathbf{x}) = \begin{bmatrix}\frac{1}{\sqrt{R}}z_{\omega_1}(\mathbf{x})\\ \frac{1}{\sqrt{R}}z_{\omega_2}(\mathbf{x})\\ \vdots\\ \frac{1}{\sqrt{R}}z_{\omega_R}(\mathbf{x})\end{bmatrix}.$	$\mathbf{z}(\mathbf{x}) = \begin{bmatrix}\frac{1}{\sqrt{R}}z_{\omega_1}(\mathbf{x})\\ \frac{1}{\sqrt{R}}z_{\omega_2}(\mathbf{x})\\ \vdots\\ \frac{1}{\sqrt{R}}z_{\omega_R}(\mathbf{x})\end{bmatrix}.$	$\mathbf{z}(\mathbf{x}) = \begin{bmatrix}\frac{1}{\sqrt{R}}z_{\omega_1}(\mathbf{x})\\ \frac{1}{\sqrt{R}}z_{\omega_2}(\mathbf{x})\\ \vdots\\ \frac{1}{\sqrt{R}}z_{\omega_R}(\mathbf{x})\end{bmatrix}.$	$\mathbf{x}(\mathbf{x}) = \left(\frac{1}{\sqrt{n}}z_{\omega_1}(\mathbf{x})\ \frac{1}{\sqrt{R}}z_{\omega_1}(\mathbf{x})\vdots\sqrt{z}_{\omega_k}(\mathbf{x})\right].$	$\mathbf{z}(\mathbf{x}) = \begin{bmatrix}\frac{1}{\sqrt{R}}z_{\omega_1}(\mathbf{x})\\ \frac{1}{\sqrt{R}}z_{\omega_2}(\mathbf{x})\\ \vdots\\ \frac{1}{\sqrt{R}}z_{\omega_R}(\mathbf{x})\end{bmatrix}.$	❌
$\mathbf{K}_X \approx \begin{bmatrix}\mathbf{z}(\mathbf{x}_1)\\ \vdots\\ \mathbf{z}(\mathbf{x}_N)\end{bmatrix}[\mathbf{z}(\mathbf{x}_1)\quad\dots\quad\mathbf{z}(\mathbf{x}_N)] = \mathbf{Z}_X\mathbf{Z}_X^\top$	$\mathbf{K}_X \approx \begin{bmatrix}\mathbf{z}(\mathbf{x}_1)\\ \vdots\\ \mathbf{z}(\mathbf{x}_N)\end{bmatrix}[\mathbf{z}(\mathbf{x}_1)\quad\dots\quad\mathbf{z}(\mathbf{x}_N)] = \mathbf{Z}_X\mathbf{Z}_X^\top$	$\mathbf{K}_X \approx \begin{bmatrix}\mathbf{z}(\mathbf{x}_1)\\ \vdots\\ \mathbf{z}(\mathbf{x}_N)\end{bmatrix}[\mathbf{z}(\mathbf{x}_1)\quad\dots\quad\mathbf{z}(\mathbf{x}_N)] = \mathbf{Z}_X\mathbf{Z}_X^\top$	❌	$\mathbf{K}_X \approx \begin{bmatrix}\mathbf{z}(\mathbf{x}_1)\\ \vdots\\ \mathbf{z}(\mathbf{x}_N)\end{bmatrix}[\mathbf{z}(\mathbf{x}_1)\cdot\ldots\cdot\mathbf{z}(\mathbf{x}_N)] = \mathbf{Z}_X\mathbf{Z}_X^\top$	$\mathrm{K}_X \approx \begin{bmatrix}z(x_1)\\ 2(x_N)\end{bmatrix}[(x_1)\cdots\quad z(x_N)] = \mathrm{Z}_x\mathrm{Z}_X^{\mathrm{I}}$
$\widehat{\mu}_n = \frac{1}{n}\sum_{i=1}^n X_i, \quad and \quad \widehat{\mu}_n - \mathbb{E}\widehat{\mu}_n := \frac{1}{n}\sum_{i=1}^n Z_i = \frac{1}{n}\sum_{i=1}^n X_i - \mathbb{E}(X_i).$	$\widehat{\mu}_n = \frac{1}{n}\sum_{i=1}^n X_i, \quad and \quad \widehat{\mu}_n - \mathbb{E}\widehat{\mu}_n := \frac{1}{n}\sum_{i=1}^n Z_i = \frac{1}{n}\sum_{i=1}^n X_i - \mathbb{E}(X_i).$	$\widehat{\mu}_n = \frac{1}{n}\sum_{i=1}^n X_i, \quad and \quad \widehat{\mu}_n - \mathbb{E}\widehat{\mu}_n := \frac{1}{n}\sum_{i=1}^n Z_i = \frac{1}{n}\sum_{i=1}^n X_i - \mathbb{E}(X_i).$	❌	$\widehat{\mu}_n = \frac{1}{n}\textstyle\sum_{i=1}^n X_i, \quad and \quad \widehat{\mu}_n - \mathbb{E}\widehat{\mu}_n := \frac{1}{n}\textstyle\sum_{i=1}^n Z_i = \frac{1}{n}\textstyle\sum_{i=1}^n X_i - \mathbb{E}(X_i).$	$and \quad \hat{\mu}_n - E\hat{a}_n : \frac{1}{n}\sum_{i=1}^n Z_i = \frac{1}{n}\sum_{i=1}^n X_i - E(X_i)$
$\gamma := \Delta^2/p, \text{ where } \Delta^2 := \sum_{k=1}^p(\mu_k^{(1)}-\mu_k^{(2)})^2 \text{ and } \mu^{(i)} = (\mu_1^{(i)},\ldots,\mu_p^{(i)})\in\mathbb{R}^p, i=1,2.$	$\gamma := \Delta^2/p, \text{ where } \Delta^2 := \sum_{k=1}^p(\mu_k^{(1)}-\mu_k^{(2)})^2 \text{ and } \mu^{(i)} = (\mu_1^{(i)},\ldots,\mu_p^{(i)})\in\mathbb{R}^p, i=1,2.$	$\gamma := \Delta^2/p, \text{ where } \Delta^2 := \sum_{k=1}^p(\mu_k^{(1)}-\mu_k^{(2)})^2 \text{ and } \mu^{(i)} = (\mu_1^{(i)},\ldots,\mu_p^{(i)})\in\mathbb{R}^p, i=1,2.$	$\gamma := \Delta^2/p, \text{ where } \Delta^2 := \sum_{k=1}^p\left(\mu_k^{(1)}-\mu_k^{(2)}\right)^2 \text{ and } \mu^{(i)} = \left(\mu_1^{(i)},\ldots,\mu_p^{(i)}\right)\in\mathbb{R}^p, i=1,2.$	$\gamma := \Delta^2/p, \text{ where } \Delta^2 := \sum_{k=1}^p(\mu_k^{(1)}-\mu_k^{(2)})^2 \text{ and } \mu^{(i)} = (\mu_1^{(i)},\ldots,\mu_p^{(i)})\in\mathbb{R}^p, i=1,2.$	❌

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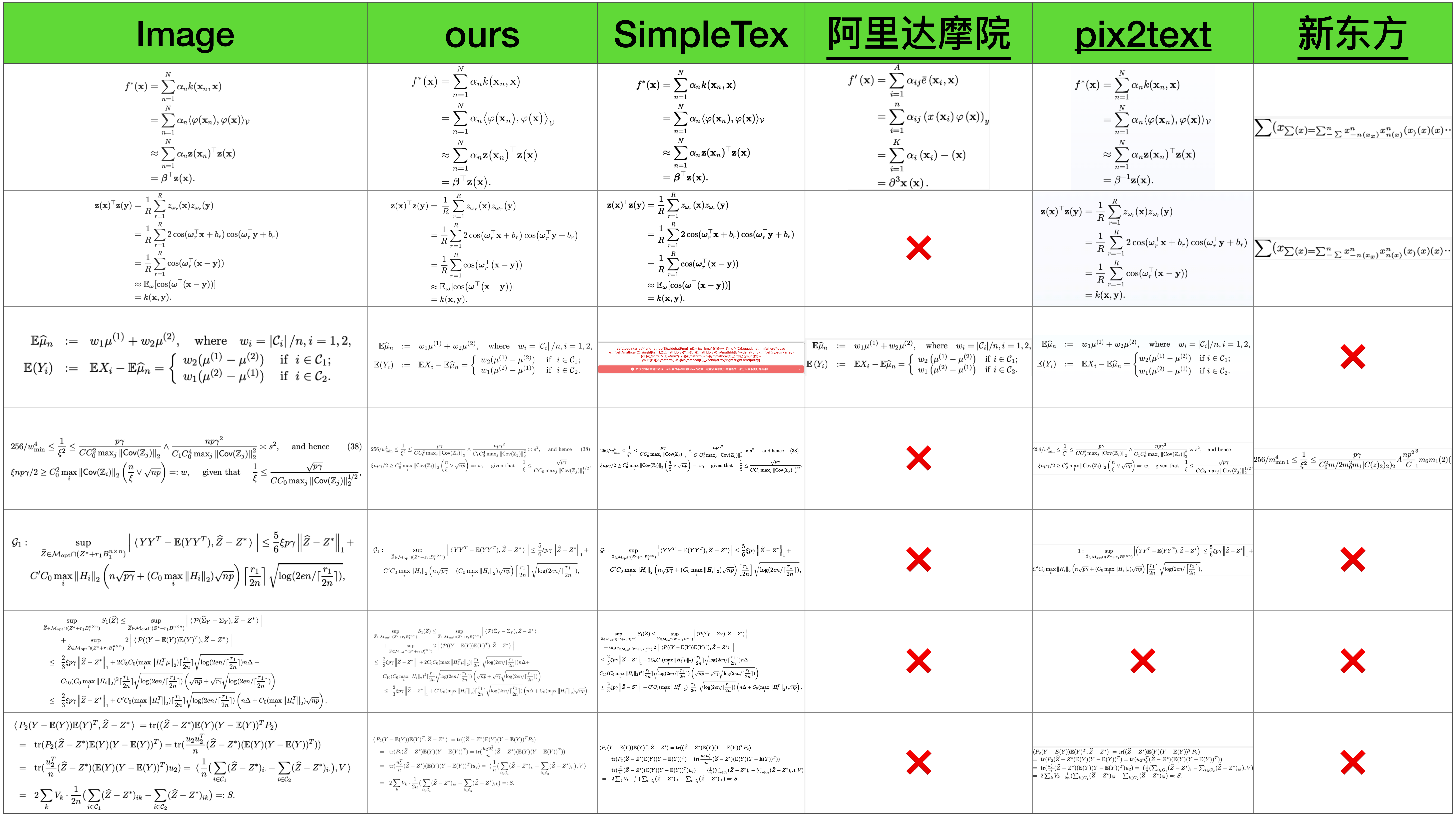
$\boldsymbol{\omega} \sim p(\boldsymbol{\omega})$ $b \sim \mathrm{Uniform}(0, 2\pi)$ $z_{\boldsymbol{\omega}}(\mathbf{x}) = \sqrt{2}\cos(\boldsymbol{\omega}^\top \mathbf{x} + b).$	$\boldsymbol{\omega} \sim p(\boldsymbol{\omega})$ $b \sim \mathrm{Uniform}(0, 2\pi)$ $z_{\omega}(\mathbf{x}) = \sqrt{2}\cos(\boldsymbol{\omega}^\top \mathbf{x} + b).$	$\boldsymbol{\omega} \sim p(\boldsymbol{\omega})$ $\boldsymbol{b} \sim \mathbf{Uniform}(0, 2\pi)$ $z_{\boldsymbol{\omega}}(\mathbf{x}) = \sqrt{2}\cos(\boldsymbol{\omega}^\top \mathbf{x} + b).$	$\omega \sim p(\omega)$ $b \sim \mathrm{Uniform}\left(0, 2\pi\right)$ $z_{\omega}\left(\mathbf{x}\right) = \sqrt{2}\cos\left(\omega^\top \mathbf{x} + b\right).$	$\omega \sim p(\omega)$ $b \sim \mathrm{Uniform}(0, 2\pi)$ $z_{\omega}(\mathbf{x}) = \sqrt{2}\cos(\omega^\top \mathbf{x} + b).$	$\omega \sim p(\omega)$ $b \sim \mathrm{Uniio}(0, 2\pi)$ $z_{\omega}(\mathrm{x}) = \sqrt{2}\cos(\omega^T x + b).$
$\sum_{j=K_1}^{k-1}(m_j - n_j) \geq \sum_{j=K_1}^{k-1}\left(\frac{a-\epsilon}{b+\epsilon}\right)^{k-j}(m_k - n_k) > (b-\epsilon)n_k\sum_{j=K_1}^{k-1}\left(\frac{a-\epsilon}{b+\epsilon}\right)^{k-j}$ $> (b-\epsilon)n_k\frac{a-\epsilon}{b-a+2\epsilon}(1-\epsilon) = \left(\frac{ba}{b-a} - \epsilon'\right)n_k,$	$\sum_{j=K_1}^{k-1}(m_j - n_j) \geq \sum_{j=K_1}^{k-1}\left(\frac{a-\epsilon}{b+\epsilon}\right)^{k-j}(m_k - n_k) > (b-\epsilon)n_k\sum_{j=K_1}^{k-1}\left(\frac{a-\epsilon}{b+\epsilon}\right)^{k-j}$ $> (b-\epsilon)n_k\frac{a-\epsilon}{b-a+2\epsilon}(1-\epsilon) = \left(\frac{ba}{b-a} - \epsilon'\right)n_k,$	$\sum_{j=K_1}^{k-1}(m_j - n_j) \geq \sum_{j=K_1}^{k-1}\left(\frac{a-\epsilon}{b+\epsilon}\right)^{k-j}(m_k - n_k) > (b-\epsilon)n_k\sum_{j=K_1}^{k-1}\left(\frac{a-\epsilon}{b+\epsilon}\right)^{k-j}$ $> (b-\epsilon)n_k\frac{a-\epsilon}{b-a+2\epsilon}(1-\epsilon) = \left(\frac{ba}{b-a} - \epsilon'\right)n_k,$	$\sum_{j=K_1}^{k-1}(m_j - n_j) \geq \sum_{j=K_1}^{k-1}\left(\frac{a-\epsilon}{b+\epsilon}\right)^{k-j}(m_k - n_k) > (b-\epsilon)n_k\sum_{j=K_1}^{k-1}\left(\frac{a-\epsilon}{b+\epsilon}\right)^{k-j}$ $> (b-\epsilon)n_k\frac{a-\epsilon}{b-a+2\epsilon}(1-\epsilon) = \left(\frac{ba}{b-a} - \epsilon'\right)n_k,$	$\sum_{j=K_1}^{k-1}(m_j - n_j) \geq \sum_{j=K_1}^{k-1}\left(\frac{a-\epsilon}{b+\epsilon}\right)^{k-j}(m_k - n_k) > (b-\epsilon)n_k\sum_{j=K_1}^{k-1}\left(\frac{a-\epsilon}{b+\epsilon}\right)^{k-j}$ $> (b-\epsilon)n_k\frac{a-\epsilon}{b-a+2\epsilon}(1-\epsilon) = \left(\frac{ba}{b-a} - \epsilon'\right)n_k,$	$\sum_{j=R_1}^{k-1}(m_j - n_j) \geq \sum_{j_1}^{k-1}(\frac{a-c}{b+c})^{k-y}(m_k - n_k) > (b-c)n_{k=i_1}^{k-1}(\frac{a-c}{b}+$
$\mathbb{E}_{\boldsymbol{\omega}}[h(\mathbf{x})h(\mathbf{y})^*] = \mathbb{E}_{\boldsymbol{\omega}}[\exp(i\boldsymbol{\omega}^\top(\mathbf{x}-\mathbf{y}))]$ $= \int_{\mathbb{R}^D} p(\boldsymbol{\omega})\exp(i\boldsymbol{\omega}^\top(\mathbf{x}-\mathbf{y}))\mathrm{d}\boldsymbol{\omega}$ $= \exp\left(-\frac{1}{2}(\mathbf{x}-\mathbf{y})^\top(\mathbf{x}-\mathbf{y})\right).$	$\mathbb{E}_{\omega}[h(\mathbf{x})h(\mathbf{y})^*] = \mathbb{E}_{\omega}[\exp(i\boldsymbol{\omega}^\top(\mathbf{x}-\mathbf{y}))]$ $= \int_{\mathbb{R}^D} p(\boldsymbol{\omega})\exp(i\boldsymbol{\omega}^\top(\mathbf{x}-\mathbf{y}))\mathrm{d}\boldsymbol{\omega}$ $= \exp(-\frac{1}{2}(\mathbf{x}-\mathbf{y})^\top(\mathbf{x}-\mathbf{y})).$	\begin{aligned} \mathbb{E}_\boldsymbol{\omega}[h(\mathbf{x})h(\mathbf{y})^*]& =\mathbb{E}_\boldsymbol{\omega}[\exp(i\boldsymbol{\omega}^\top(\mathbf{x}-\mathbf{y}))] \\ &=\int_{\mathbb{R}^D}p(\boldsymbol{\omega})\exp(i\boldsymbol{\omega}^\top(\mathbf{x}-\mathbf{y}))\mathrm{d}\boldsymbol{\omega} \\ &=\exp(-\frac12(\mathbf{x}-\mathbf{y})^\top(\mathbf{x}-\mathbf{y})). \end{aligned} 本次识别结果含有错误，可以尝试手动修复Latex表达式，或重新截取更小更清晰的一部分以获取更好的结果！	✗	$\mathbb{E}_{\omega}[h(\mathbf{x})h(\mathbf{y})^*] = \mathbb{E}_{\omega}[\exp(i\boldsymbol{\omega}^\top(\mathbf{x}-\mathbf{y}))]$ $= \int_{\mathbb{R}^D} p(\boldsymbol{\omega})\exp(i\boldsymbol{\omega}^\top(\mathbf{x}-\mathbf{y}))\mathrm{d}\boldsymbol{\omega}$ $= \exp(-\frac{1}{2}(\mathbf{x}-\mathbf{y})^\top(\mathbf{x}-\mathbf{y})).$	✗
$\sum_{n=\lfloor N^{1-\epsilon}\rfloor+1}^{N}\chi_{\sigma^{-n}I_n}(\omega) = F(N) - F(\lfloor N^{1-\epsilon}\rfloor) + O\left(\log^{\frac{2}{3}}N\right)$ $= \sum_{n=\lfloor N^{1-\epsilon}\rfloor+1}^{N}\mu(I_n) + O\left(\log^{\frac{2}{3}}N\right)$ $\geq \gamma_1^{-1}\frac{\epsilon}{2}\log N + O\left(\log^{\frac{2}{3}}N\right) \geq 1$	$\sum_{n=\lfloor N^{1-\epsilon}\rfloor+1}^{N}\chi_{\sigma^{-n}I_n}(\omega) = F(N) - F(\lfloor N^{1-\epsilon}\rfloor) + O\left(\log^{\frac{2}{3}}N\right)$ $= \sum_{n=\lfloor N^{1-\epsilon}\rfloor+1}^{N}\mu(I_n) + O\left(\log^{\frac{2}{3}}N\right)$ $\geq \gamma_1^{-1}\frac{\epsilon}{2}\log N + O\left(\log^{\frac{2}{3}}N\right) \geq 1$	$\sum_{n=\lfloor N^{1-\epsilon}\rfloor+1}^{N}\chi_{\sigma^{-n}I_n}(\omega) = F(N) - F(\lfloor N^{1-\epsilon}\rfloor) + O\left(\log^{\frac{2}{3}}N\right)$ $= \sum_{n=\lfloor N^{1-\epsilon}\rfloor+1}^{N}\mu(I_n) + O\left(\log^{\frac{2}{3}}N\right)$ $\geq \gamma_1^{-1}\frac{\epsilon}{2}\log N + O\left(\log^{\frac{2}{3}}N\right) \geq 1$	✗	$\sum_{n=\lfloor N^{1-\epsilon}\rfloor+1}^{N}\chi_{\sigma^{-n}I_n}(\omega) = F(N) - F(\lfloor N^{1-\epsilon}\rfloor) + O\left(\log^{\frac{2}{3}}N\right)$ $= \sum_{n=\lfloor N^{1-\epsilon}\rfloor+1}^{N}\mu(I_n) + O\left(\log^{\frac{2}{3}}N\right)$ $\geq \gamma_1^{-1}\frac{\epsilon}{2}\log N + O\left(\log^{\frac{2}{3}}N\right) \geq 1$	✗
$\mathrm{CL}\left(n - \frac{q^{m-1}+\cdots+q^b+2q^{b-1}+\cdots+2}{\lambda}\right) = \mathrm{CL}\left(\frac{q^m - q^{m-1} - \cdots - q^b - 2q^{b-1} - \cdots - 3}{\lambda}\right)$ $= \frac{q^m - 2q^{m-1} - \cdots - 2q^{m-b} - q^{m-b-1} - \cdots - q - 2}{\lambda}$ $> \frac{q^{m-1}-1}{\lambda} > \delta - 1.$	$\mathrm{CL}\left(n - \frac{q^{m-1}+\cdots+q^b+2q^{b-1}+\cdots+2}{\lambda}\right) = \mathrm{CL}\left(\frac{q^m - q^{m-1} - \cdots - q^b - 2q^{b-1} - \cdots - 3}{\lambda}\right)$ $= \frac{q^m - 2q^{m-1} - \cdots - 2q^{m-b} - q^{m-b-1} - \cdots - q - 2}{\lambda}$ $> \frac{q^{m-1}-1}{\lambda} > \delta - 1.$	$\mathrm{CL}\left(n - \frac{q^{m-1}+\cdots+q^b+2q^{b-1}+\cdots+2}{\lambda}\right) = \mathrm{CL}\left(\frac{q^m - q^{m-1} - \cdots - q^b - 2q^{b-1} - \cdots - 3}{\lambda}\right)$ $= \frac{q^m - 2q^{m-1} - \cdots - 2q^{m-b} - q^{m-b-1} - \cdots - q - 2}{\lambda}$ $> \frac{q^{m-1}-1}{\lambda} > \delta - 1.$	$\mathrm{CL}\left(n - \frac{q^{m-1}+\cdots+q^b+2q^{p-1}+\cdots+2}{\lambda}\right) = \mathrm{CL}\left(\frac{q^m - q^{m-1} \cdots \cdots q^b - 2q^{p-1} - \cdots - 3}{\lambda}\right)$ $= \frac{q^m - 2q^{n-1} \cdots \cdots 2q^{n-b} - q^{n-b-1} \cdots q - 2}{\lambda}$ $> \frac{q^{m-1}-1}{\lambda} > \delta - 1.$	$\mathrm{CL}\left(n - \frac{q^{m-1}+\cdots+q^b+2q^{b-1}+\cdots+2}{\lambda}\right) = \mathrm{CL}\left(\frac{q^m - q^{m-1} - \cdots - q^b - 2q^{b-1} - \cdots - 3}{\lambda}\right)$ $= \frac{q^m - 2q^{m-1} - \cdots - 2q^{m-b} - q^{m-b-1} - \cdots - q - 2}{\lambda}$ $> \frac{q^{m-1}-1}{\lambda} > \delta - 1.$	✗
$\mathbb{E}_{\boldsymbol{\omega}}[z_{\boldsymbol{\omega}}(\mathbf{x})z_{\boldsymbol{\omega}}(\mathbf{y})] = \mathbb{E}_{\boldsymbol{\omega}}[\sqrt{2}\cos(\boldsymbol{\omega}^\top\mathbf{x}+b)\sqrt{2}\cos(\boldsymbol{\omega}^\top\mathbf{y}+b)]$ $\overset{\star}{=} \mathbb{E}_{\boldsymbol{\omega}}[\cos(\boldsymbol{\omega}^\top(\mathbf{x}+\mathbf{y})+2b)] + \mathbb{E}_{\boldsymbol{\omega}}[\cos(\boldsymbol{\omega}^\top(\mathbf{x}-\mathbf{y}))]$ $\overset{\dagger}{=} \mathbb{E}_{\boldsymbol{\omega}}[\cos(\boldsymbol{\omega}^\top(\mathbf{x}-\mathbf{y}))].$	$\mathbb{E}_{\omega}[z_{\omega}(\mathbf{x})z_{\omega}(\mathbf{y})] = \mathbb{E}_{\omega}[\sqrt{2}\cos(\boldsymbol{\omega}^\top\mathbf{x}+b)\sqrt{2}\cos(\boldsymbol{\omega}^\top\mathbf{y}+b)]$ $\overset{\star}{=} \mathbb{E}_{\omega}[\cos(\boldsymbol{\omega}^\top(\mathbf{x}+\mathbf{y})+2b)] + \mathbb{E}_{\omega}[\cos(\boldsymbol{\omega}^\top(\mathbf{x}-\mathbf{y}))]$ $\overset{\dagger}{=} \mathbb{E}_{\omega}[\cos(\boldsymbol{\omega}^\top(\mathbf{x}-\mathbf{y}))].$	\begin{aligned} \mathbb{E}_\boldsymbol{\omega}[z_\boldsymbol{\omega}(\mathbf{x})z_\boldsymbol{\omega}(\mathbf{y})]& =\mathbb{E}_\boldsymbol{\omega} [\sqrt2\cos(\boldsymbol{\omega}^\top\mathbf{x}+b)\sqrt2\cos(\boldsymbol{\omega}^\top\mathbf{y}+b)] \\ &\overset{\star}{\operatorname*{=}}\mathbb{E}_{\boldsymbol{\omega}}[\cos(\boldsymbol{\omega}^{\top}(\mathbf{x}+\mathbf{y})+2b)]+\mathbb{E}_{\boldsymbol{\omega}}[\cos(\boldsymbol{\omega}^{\top}(\mathbf{x}-\mathbf{y}))] \\ &\overset{\dagger}{\operatorname*{=}}\mathbb{E}_{\boldsymbol{\omega}}[\cos(\boldsymbol{\omega}^{\top}(\mathbf{x}-\mathbf{y}))]. \end{aligned} 本次识别结果含有错误，可以尝试手动修复Latex表达式，或重新截取更小更清晰的一部分以获取更好的结果！	✗	\begin{aligned} {\mathbb{E}_{\boldsymbol{\omega}} [z_{\boldsymbol{\om	✗
$f(x\sigma(y)) = f^e(x)g^e(y) + g^e(x)f^e(y) + h^e(x)h^e(y)$ $+ f^o(x)g^o(y) + g^o(x)f^o(y) + h^o(x)h^o(y)$ $+ f^e(x)g^o(y) + g^e(x)f^o(y) + h^e(x)h^o(y)$ $+ f^o(x)g^e(y) + g^o(x)f^e(y) + h^o(x)h^e(y)$	$f(x\sigma(y)) = f^e(x)g^e(y) + g^e(x)f^e(y) + h^e(x)h^e(y)$ $+ f^o(x)g^o(y) + g^o(x)f^o(y) + h^o(x)h^o(y)$ $+ f^e(x)g^o(y) + g^e(x)f^o(y) + h^e(x)h^o(y)$ $+ f^o(x)g^e(y) + g^o(x)f^e(y) + h^o(x)h^e(y)$	$\boldsymbol{f(x\sigma(y)) = f^e(x)g^e(y) + g^e(x)f^e(y) + h^e(x)h^e(y)}$ $\boldsymbol{+f^o(x)g^o(y) + g^o(x)f^o(y) + h^o(x)h^o(y)}$ $\boldsymbol{+f^e(x)g^o(y) + g^e(x)f^o(y) + h^e(x)h^o(y)}$ $\boldsymbol{+f^o(x)g^e(y) + g^o(x)f^e(y) + h^o(x)h^e(y)}$	$f\left(x\sigma\left(y\right)\right) = f^c\left(x\right)g^c\left(y\right) + g^c\left(x\right)f^c\left(y\right) + h^c\left(x\right)h^c\left(y\right)$ $+ f^o\left(x\right)g^o\left(y\right) + g^o\left(x\right)f^o\left(y\right) + h^o\left(x\right)h^o\left(y\right)$ $+ f^c\left(x\right)g^o\left(y\right) + g^c\left(x\right)f^o\left(v\right) + h^c\left(x\right)h^o\left(y\right)$ $+ f^o\left(x\right)g^c\left(y\right) + g^o\left(x\right)f^c\left(y\right) + h^o\left(x\right)h^c\left(y\right)$	$f(x\sigma(y)) = f^e(x)g^e(y) + g^e(x)f^e(y) + h^e(x)h^e(y)$ $+ f^o(x)g^o(y) + g^o(x)f^o(y) + h^o(x)h^o(y)$ $+ f^e(x)g^o(y) + g^e(x)f^o(y) + h^e(x)h^o(y)$ $+ f^o(x)g^e(y) + g^o(x)f^e(y) + h^o(x)h^e(y)$	✗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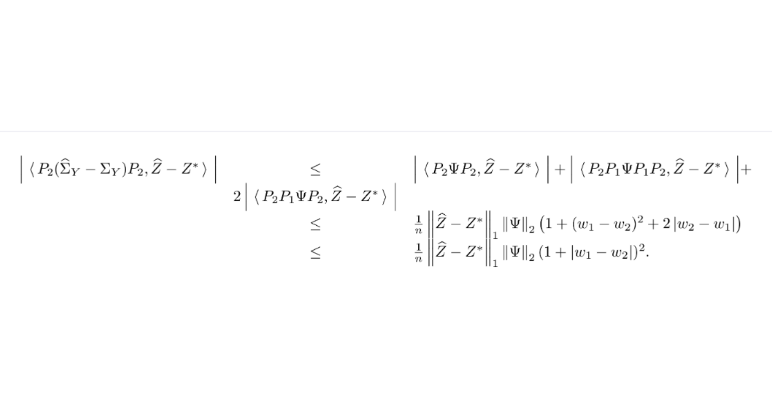
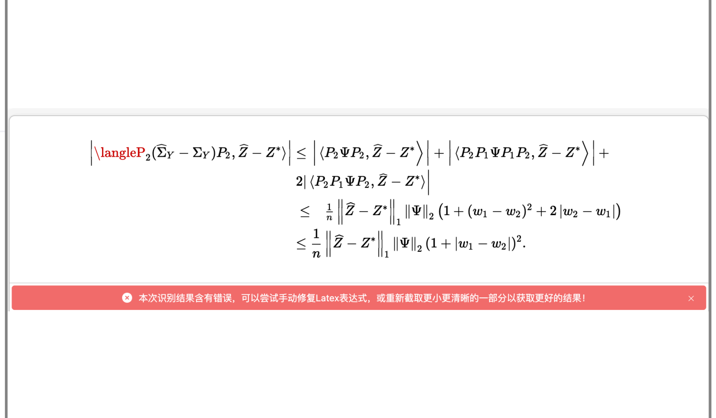
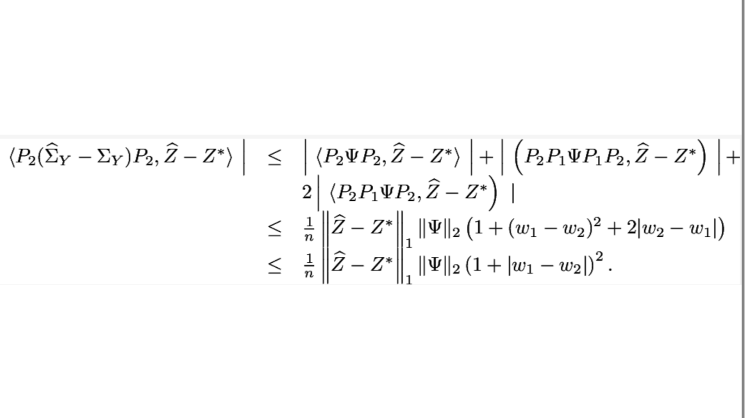
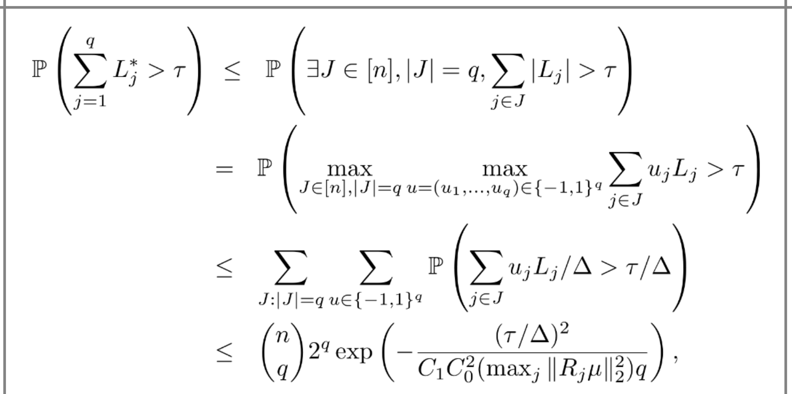
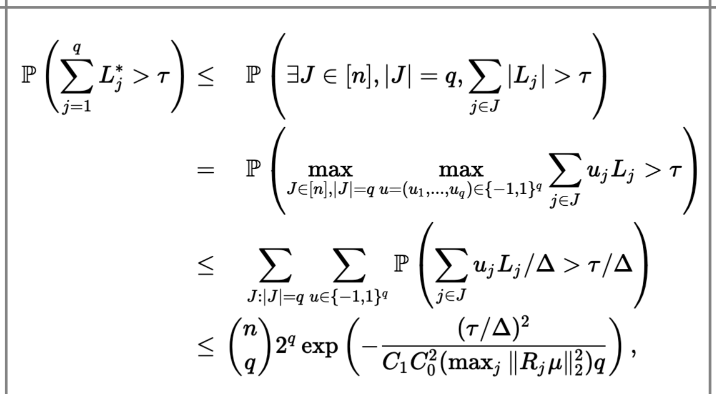
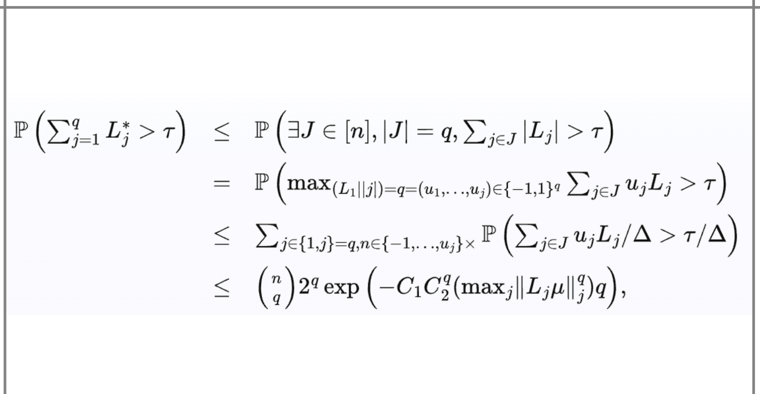
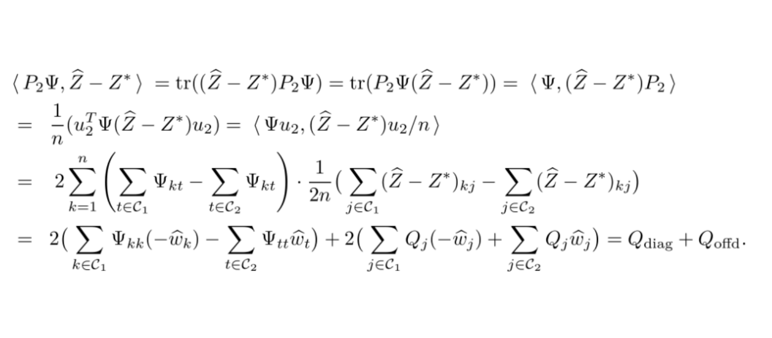
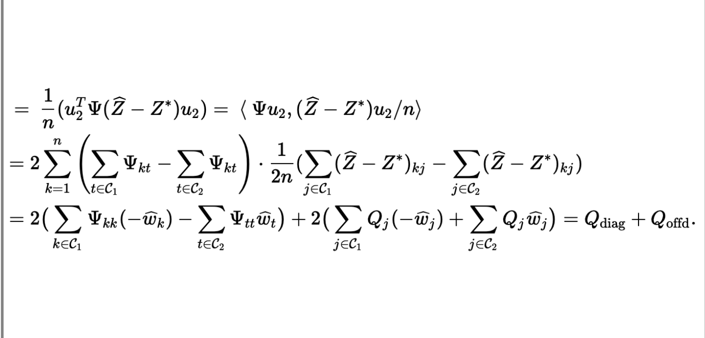
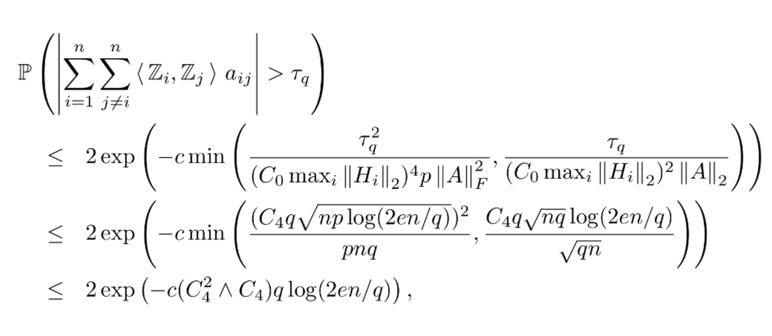
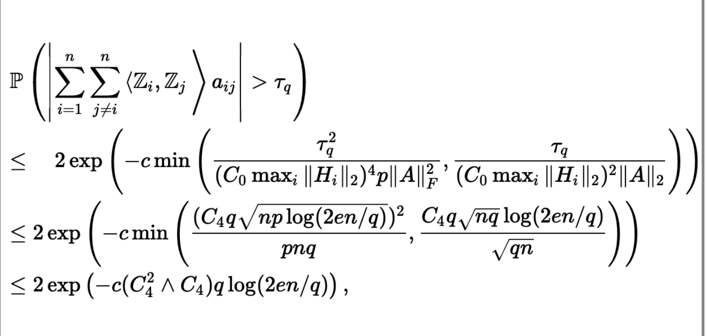
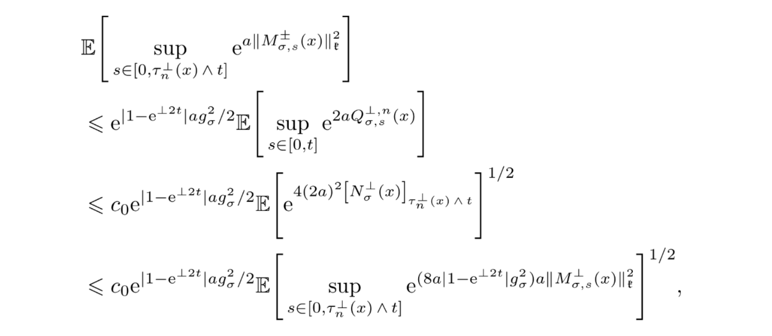
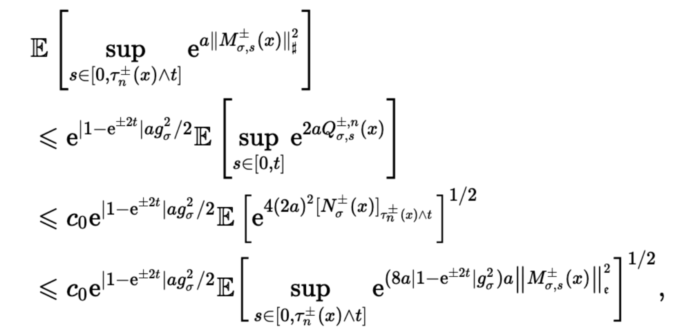
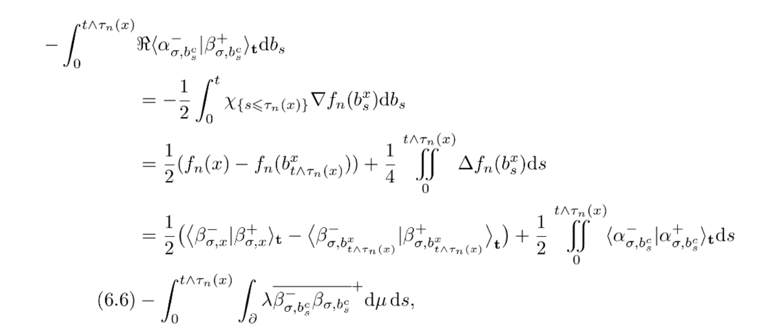
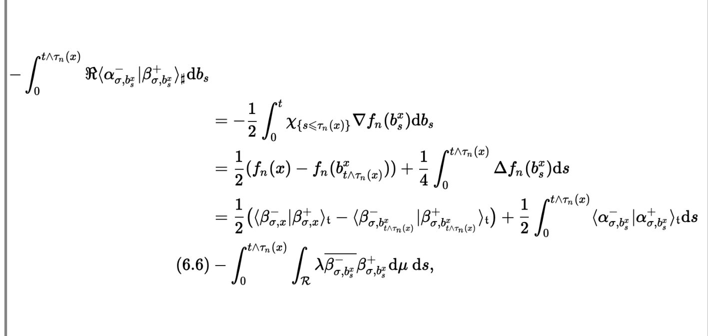
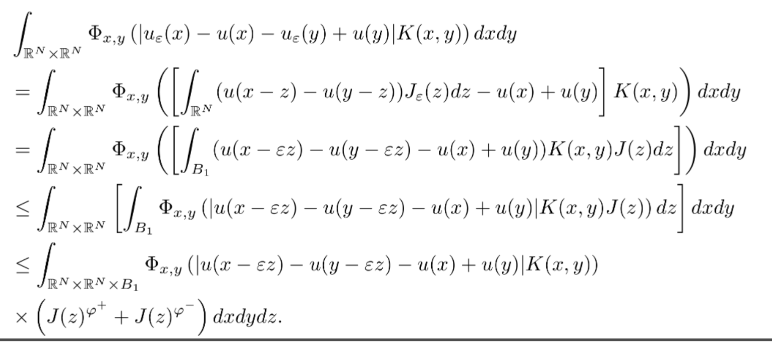
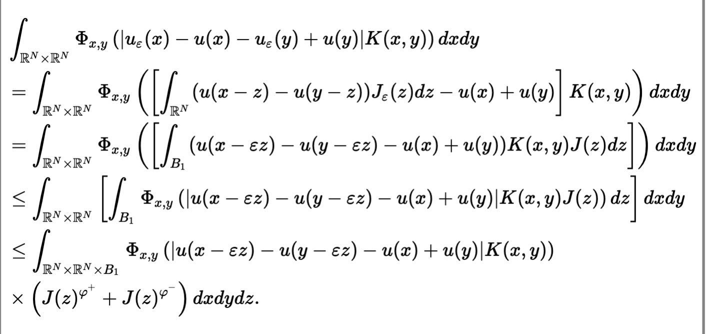
$\begin{aligned} \left\vert \langle P_2(\widehat{\Sigma}_Y-\Sigma_Y)P_2, \widehat{Z}-Z^* \rangle \right\vert \;\; \leq & \;\; \left\vert \langle P_2\Psi P_2, \widehat{Z}-Z^* \rangle \right\vert + \left\vert \langle P_2P_1\Psi P_1P_2, \widehat{Z}-Z^* \rangle \right\vert + \\ & 2\left\vert \langle P_2P_1\Psi P_2, \widehat{Z}-Z^* \rangle \right\vert \\ \leq & \;\; \frac{1}{n}\left\Vert \widehat{Z}-Z^* \right\Vert_1 \Vert\Psi\Vert_2 \left(1+(w_1-w_2)^2+2\vert w_2-w_1\vert\right) \\ \leq & \;\; \frac{1}{n}\left\Vert \widehat{Z}-Z^* \right\Vert_1 \Vert\Psi\Vert_2 (1+\vert w_1-w_2\vert)^2. \end{aligned}$			✗		✗
$\begin{aligned} \mathbb{P}\left(\sum_{j=1}^q L_j^* > \tau\right) \;\; \leq & \;\; \mathbb{P}\left(\exists J\in[n], \vert J\vert=q, \sum_{j\in J}\vert L_j\vert > \tau\right) \\ = & \;\; \mathbb{P}\left(\max_{J\in[n],\vert J\vert=q}\max_{u=(u_1,\ldots,u_q)\in\{-1,1\}^q}\sum_{j\in J}u_jL_j > \tau\right) \\ \leq & \;\; \sum_{J:\vert J\vert=q}\sum_{u\in\{-1,1\}^q}\mathbb{P}\left(\sum_{j\in J}u_jL_j/\Delta > \tau/\Delta\right) \\ \leq & \;\; \binom{n}{q}2^q\exp\left(-\frac{(\tau/\Delta)^2}{C_1C_0^2(\max_j \Vert R_j\mu\Vert_2^2)q}\right), \end{aligned}$			✗		✗
$\begin{aligned} \langle P_2\Psi, \widehat{Z}-Z^* \rangle \; & = \mathrm{tr}((\widehat{Z}-Z^*)P_2\Psi) = \mathrm{tr}(P_2\Psi(\widehat{Z}-Z^*)) = \langle \Psi, (\widehat{Z}-Z^*)P_2 \rangle \\ = & \;\; \frac{1}{n}(u_2^T\Psi(\widehat{Z}-Z^*)u_2) = \langle \Psi u_2, (\widehat{Z}-Z^*)u_2/n \rangle \\ = & \;\; 2\sum_{k=1}^n\left(\sum_{t\in\mathcal{C}_1}\Psi_{kt}-\sum_{t\in\mathcal{C}_2}\Psi_{kt}\right)\cdot\frac{1}{2n}\Big(\sum_{j\in\mathcal{C}_1}(\widehat{Z}-Z^*)_{kj}-\sum_{j\in\mathcal{C}_2}(\widehat{Z}-Z^*)_{kj}\Big) \\ = & \;\; 2\Big(\sum_{k\in\mathcal{C}_1}\Psi_{kk}(-\widehat{w}_k)-\sum_{t\in\mathcal{C}_2}\Psi_{tt}\widehat{w}_t\Big)+2\Big(\sum_{j\in\mathcal{C}_1}Q_j(-\widehat{w}_j)+\sum_{j\in\mathcal{C}_2}Q_j\widehat{w}_j\Big) = Q_{\mathrm{diag}}+Q_{\mathrm{offd}}. \end{aligned}$			✗	\begin{array} {r l} {{{}}} & {{(P_{2} \Psi, \widehat{Z}-Z^{*})=\mathrm{t	✗
$\begin{aligned} & \mathbb{P}\left(\left\vert\sum_{i=1}^n\sum_{j\neq i}^n\langle \mathbb{Z}_i, \mathbb{Z}_j \rangle a_{ij}\right\vert > \tau_q\right) \\ \leq & \;\; 2\exp\left(-c\min\left(\frac{\tau_q^2}{(C_0\max_i\Vert H_i\Vert_2)^4p\Vert A\Vert_F^2}, \frac{\tau_q}{(C_0\max_i\Vert H_i\Vert_2)^2\Vert A\Vert_2}\right)\right) \\ \leq & \;\; 2\exp\left(-c\min\left(\frac{(C_4q\sqrt{np\log(2en/q)})^2}{pnq}, \frac{C_4q\sqrt{nq}\log(2en/q)}{\sqrt{qn}}\right)\right) \\ \leq & \;\; 2\exp\left(-c(C_4^2\wedge C_4)q\log(2en/q)\right), \end{aligned}$			✗	\begin{array} {r l} {{{}}} & {{(P_{2} \Psi, \widehat{Z}-Z^{*})=\mathrm{t r} ((\wid	✗
$\begin{aligned} & \mathbb{E}\Big[\sup_{s\in[0,\tau_n^{\pm}(x)\wedge t]} \mathrm{e}^{a\Vert M_{\sigma,s}^{\pm}(x)\Vert_{\mathfrak{k}}^2}\Big] \\ & \leqslant \mathrm{e}^{\vert 1-\mathrm{e}^{\pm 2t}\vert ag_\sigma^2/2}\mathbb{E}\Big[\sup_{s\in[0,t]}\mathrm{e}^{2aQ_{\sigma,s}^{\pm,n}(x)}\Big] \\ & \leqslant c_0\mathrm{e}^{\vert 1-\mathrm{e}^{\pm 2t}\vert ag_\sigma^2/2}\mathbb{E}\Big[\mathrm{e}^{4(2a)^2[N_\sigma^{\pm}(x)]_{\tau_n^{\pm}(x)\wedge t}}\Big]^{1/2} \\ & \leqslant c_0\mathrm{e}^{\vert 1-\mathrm{e}^{\pm 2t}\vert ag_\sigma^2/2}\mathbb{E}\Big[\sup_{s\in[0,\tau_n^{\pm}(x)\wedge t]}\mathrm{e}^{(8a\vert 1-\mathrm{e}^{\pm 2t}\vert g_\sigma^2)a\Vert M_{\sigma,s}^{\pm}(x)\Vert_{\mathfrak{k}}^2}\Big]^{1/2}, \end{aligned}$			✗	\begin{aligned} {{}} & {{}} {{}} {{\bf E} \bigg[\operatorname* {s u p}_{s \in[0, \tau_{	✗
$\begin{aligned} & -\int_0^{t\wedge\tau_n(x)}\Re\langle\alpha_{\sigma,b_s^x}^{-}\vert\beta_{\sigma,b_s^x}^{+}\rangle_{\mathfrak{k}}\mathrm{d}b_s \\ & = -\frac{1}{2}\int_0^t\chi_{\{s\leqslant\tau_n(x)\}}\nabla f_n(b_s^x)\mathrm{d}b_s \\ & = \frac{1}{2}(f_n(x)-f_n(b_{t\wedge\tau_n(x)}^x))+\frac{1}{4}\int_0^{t\wedge\tau_n(x)}\Delta f_n(b_s^x)\mathrm{d}s \\ & = \frac{1}{2}\big(\langle\beta_{\sigma,x}^{-}\vert\beta_{\sigma,x}^{+}\rangle_{\mathfrak{k}}-\langle\beta_{\sigma,b_{t\wedge\tau_n(x)}^x}^{-}\vert\beta_{\sigma,b_{t\wedge\tau_n(x)}^x}^{+}\rangle_{\mathfrak{k}}\big)+\frac{1}{2}\int_0^{t\wedge\tau_n(x)}\langle\alpha_{\sigma,b_s^x}^{-}\vert\alpha_{\sigma,b_s^x}^{+}\rangle_{\mathfrak{k}}\mathrm{d}s \\ (6.6) \quad & -\int_0^{t\wedge\tau_n(x)}\int_{\mathcal{K}}\lambda\overline{\beta_{\sigma,b_s^x}^{-}}\beta_{\sigma,b_s^x}^{+}\mathrm{d}\mu\,\mathrm{d}s, \end{aligned}$			✗	\begin{aligned} {{}} & {{}} {{}} {{\bf E} \bigg[\operatorname* {s u p}_{s \in[0, \tau_{	✗
$\begin{aligned} & \int_{\mathbb{R}^N\times\mathbb{R}^N}\Phi_{x,y}\left(\vert u_\varepsilon(x)-u(x)-u_\varepsilon(y)+u(y)\vert K(x,y)\right)dxdy \\ & = \int_{\mathbb{R}^N\times\mathbb{R}^N}\Phi_{x,y}\left(\left[\int_{\mathbb{R}^N}(u(x-z)-u(y-z))J_\varepsilon(z)dz-u(x)+u(y)\right]K(x,y)\right)dxdy \\ & = \int_{\mathbb{R}^N\times\mathbb{R}^N}\Phi_{x,y}\left(\left[\int_{B_1}(u(x-\varepsilon z)-u(y-\varepsilon z)-u(x)+u(y))K(x,y)J(z)dz\right]\right)dxdy \\ & \leq \int_{\mathbb{R}^N\times\mathbb{R}^N}\left[\int_{B_1}\Phi_{x,y}\left(\vert u(x-\varepsilon z)-u(y-\varepsilon z)-u(x)+u(y)\vert K(x,y)J(z)\right)dz\right]dxdy \\ & \leq \int_{\mathbb{R}^N\times\mathbb{R}^N\times B_1}\Phi_{x,y}\left(\vert u(x-\varepsilon z)-u(y-\varepsilon z)-u(x)+u(y)\vert K(x,y)\right) \\ & \times\left(J(z)^{\varphi^+}+J(z)^{\varphi^-}\right)dxdydz. \qquad (2.7) \end{aligned}$			✗	\begin{aligned} {{}} & {{}} {{}} \int_{K^{N} \times R^{N}} \Phi_{x, y} \left(| u_{t} (x	✗

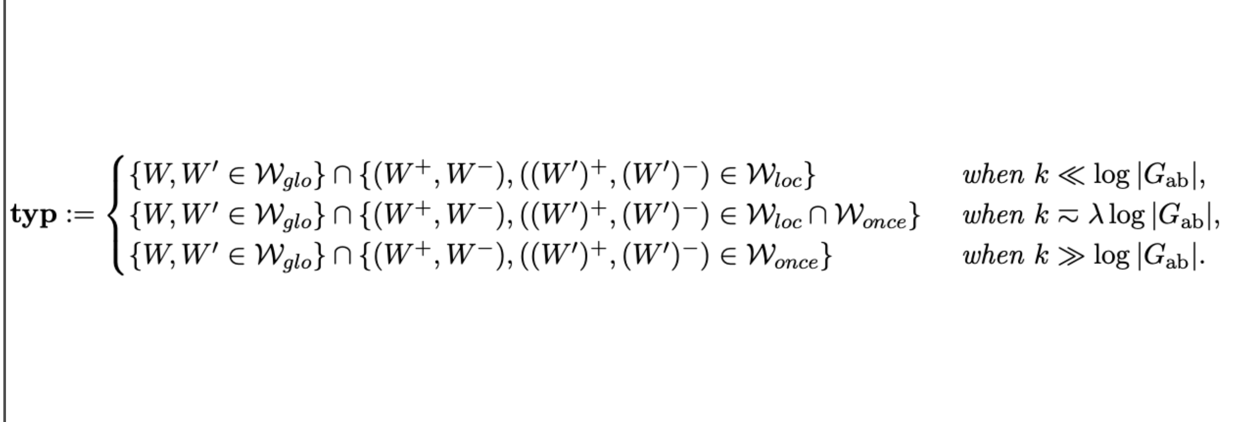
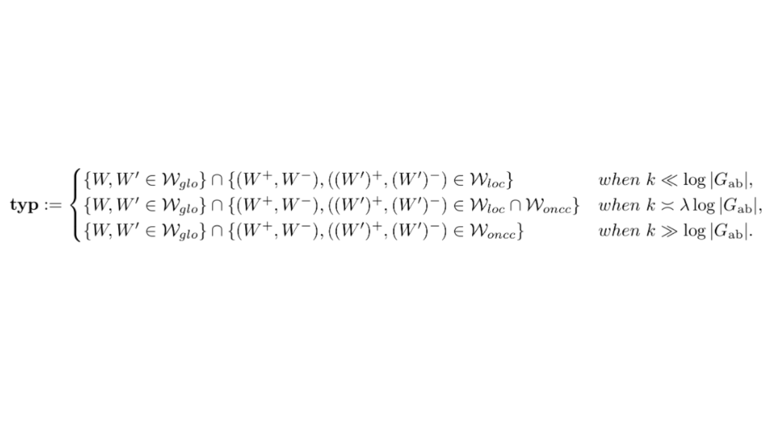
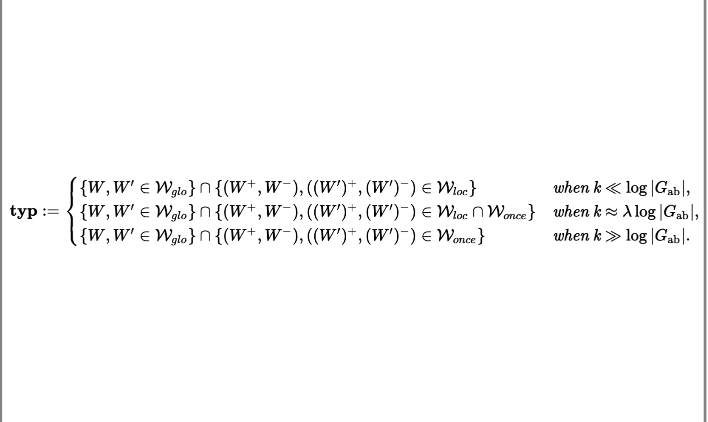
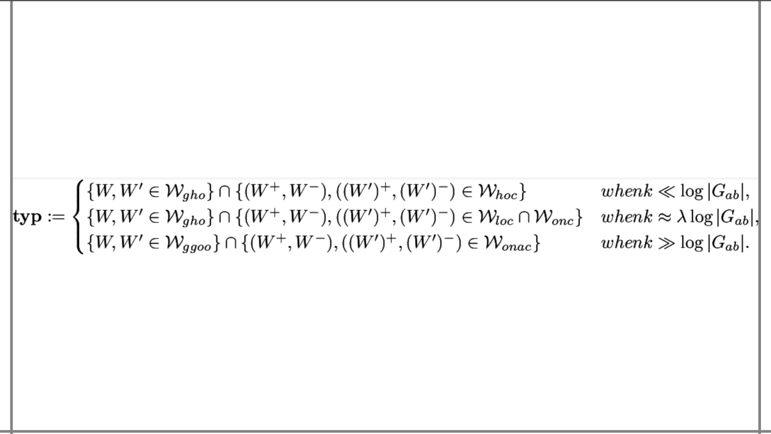
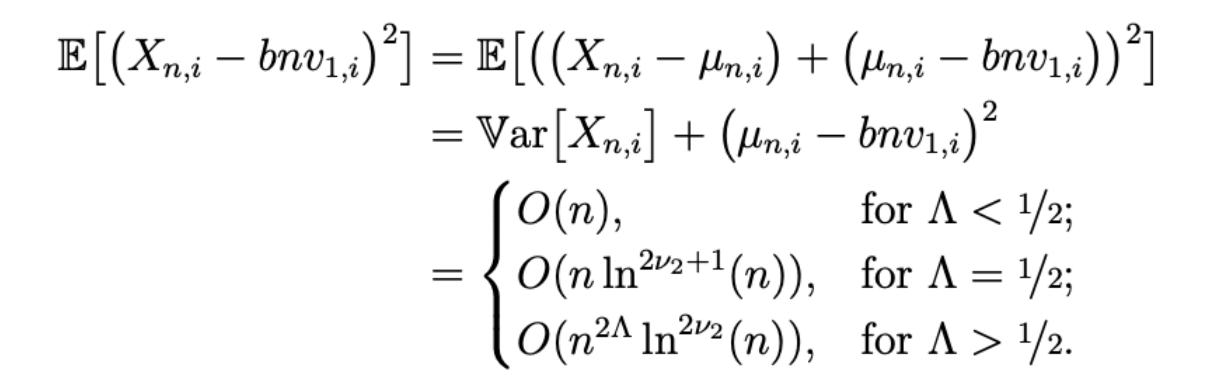
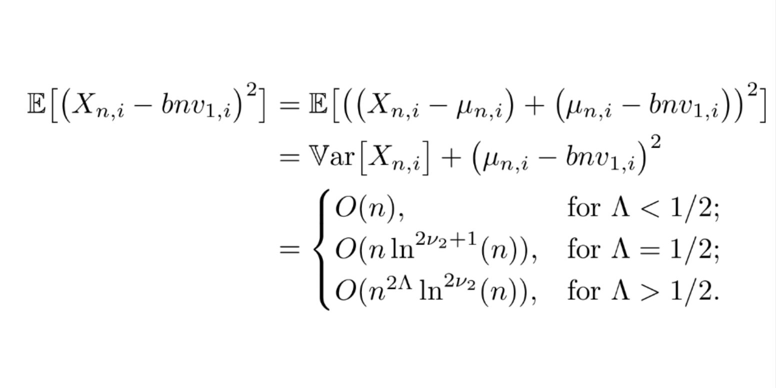
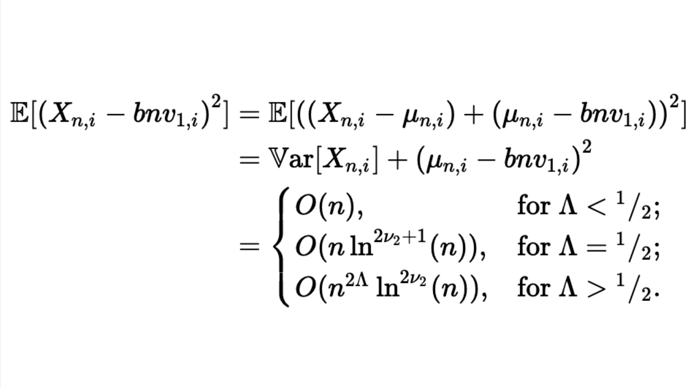
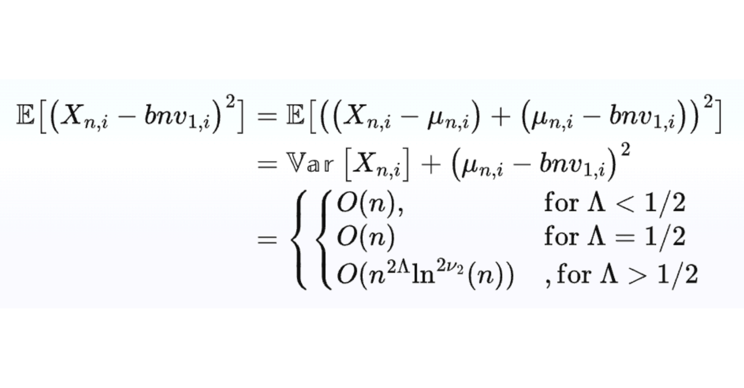
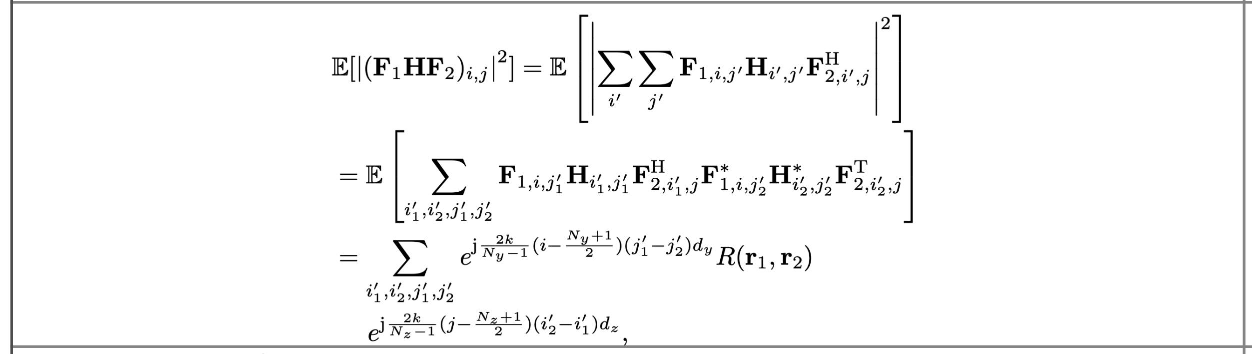
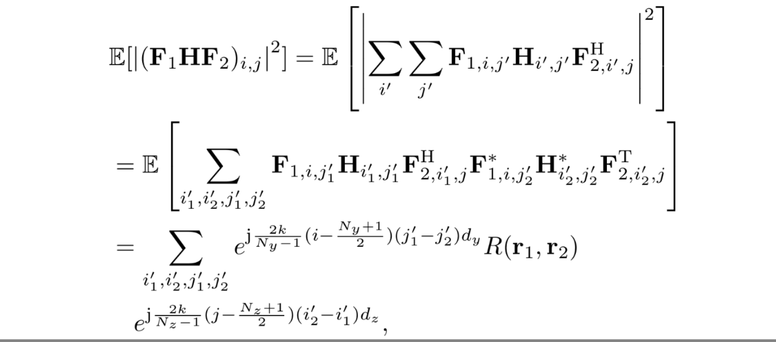
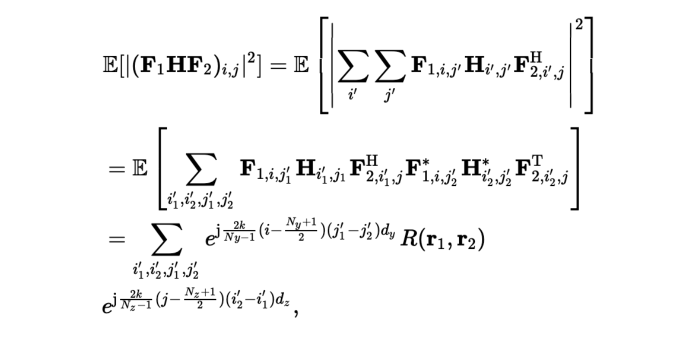
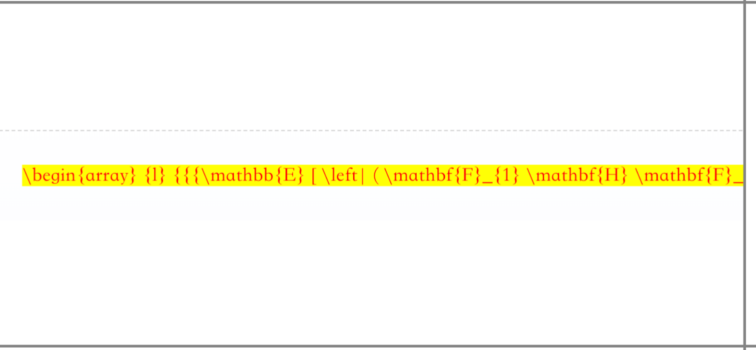
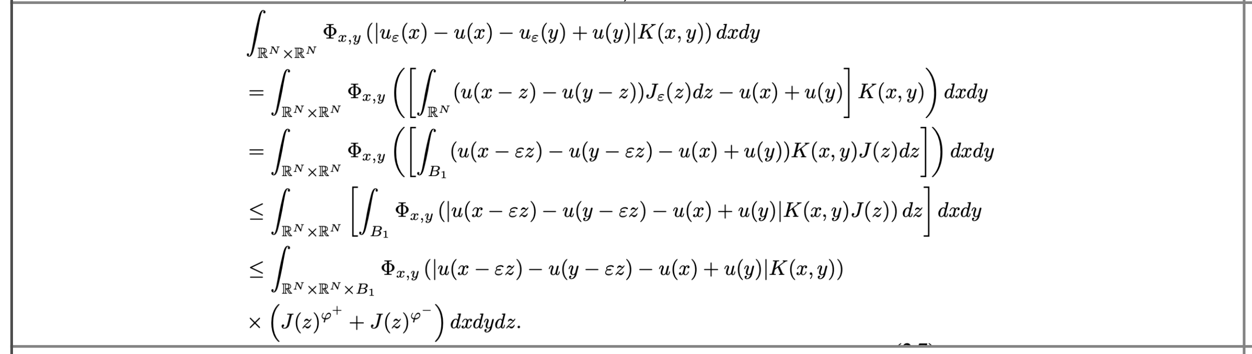
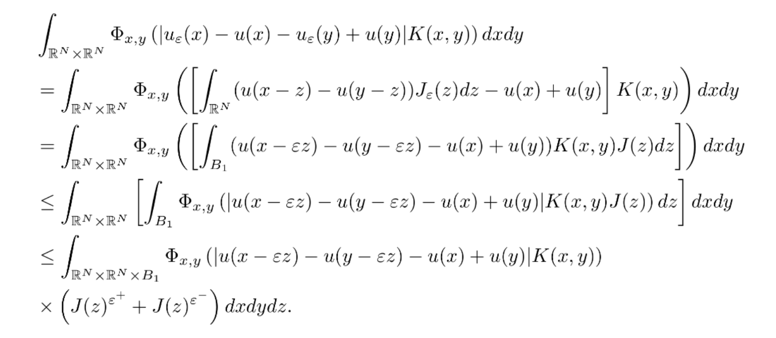
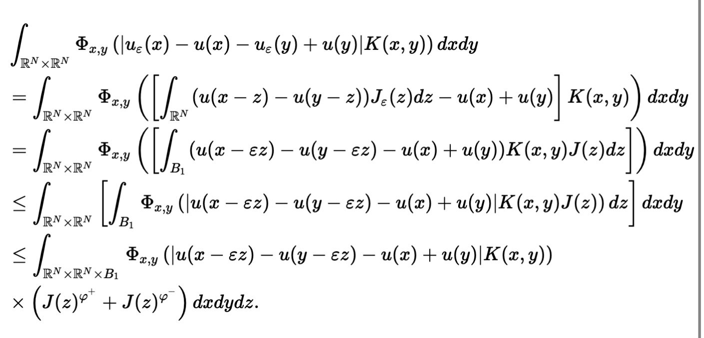
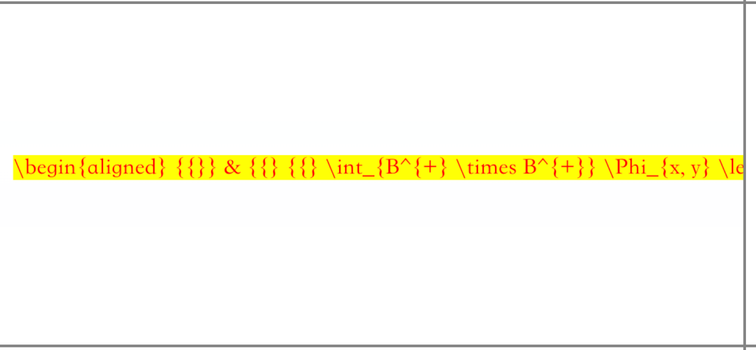
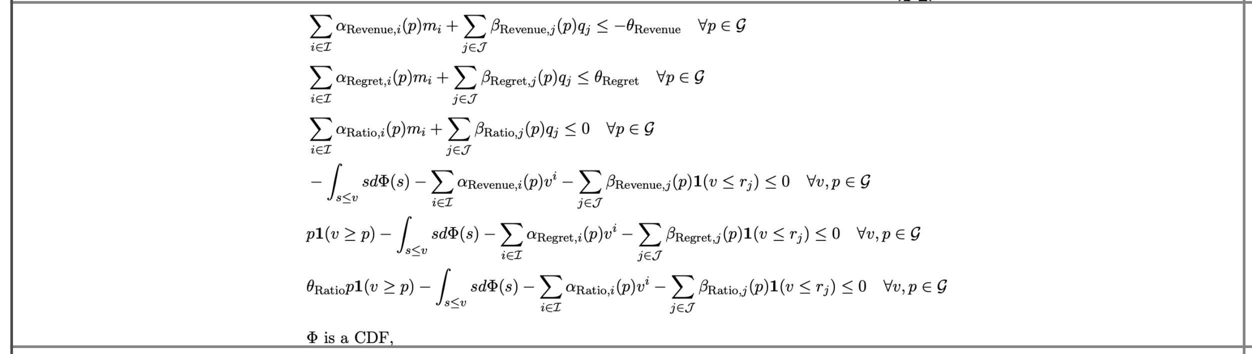
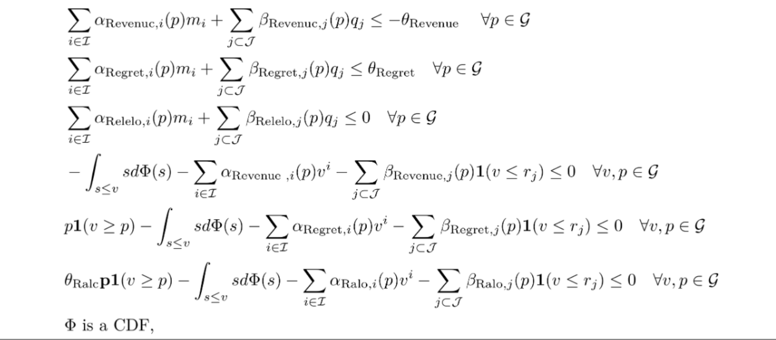
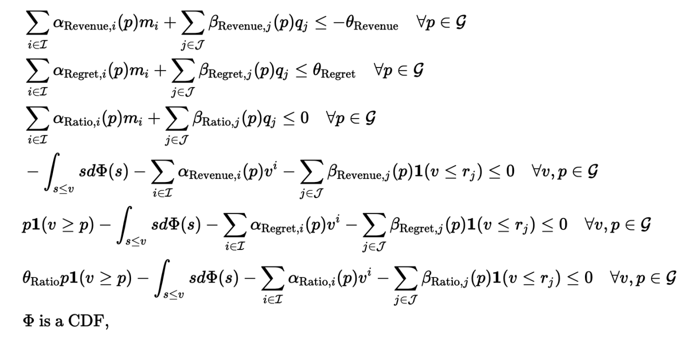
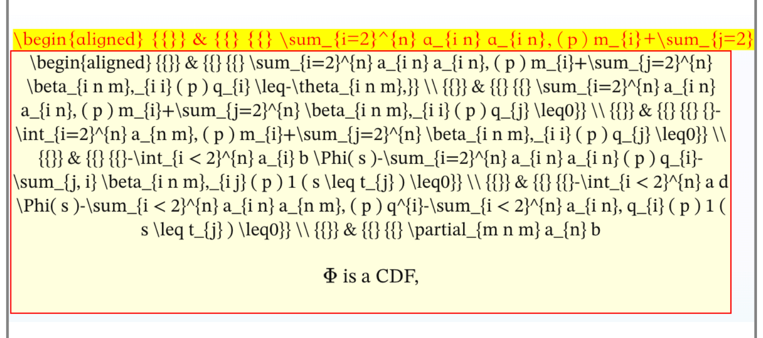
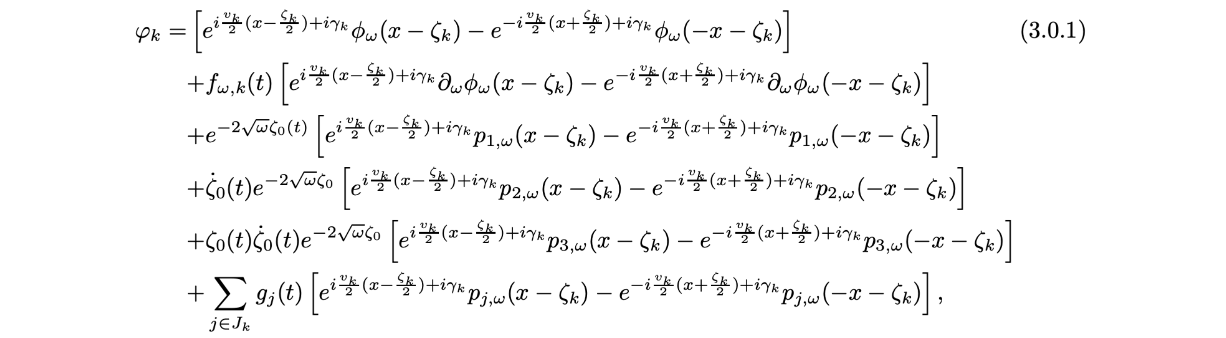
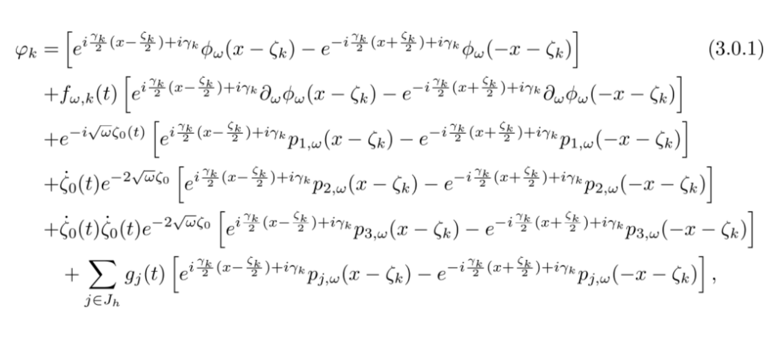
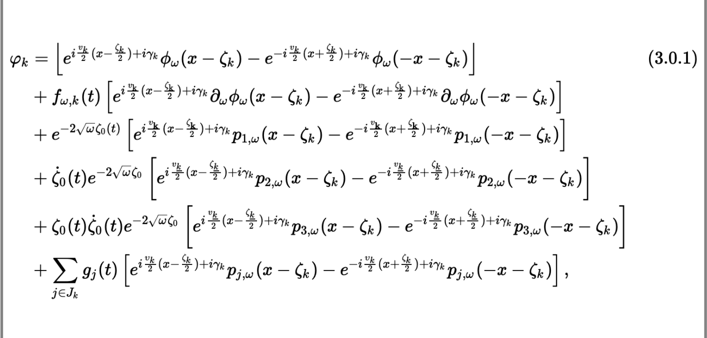
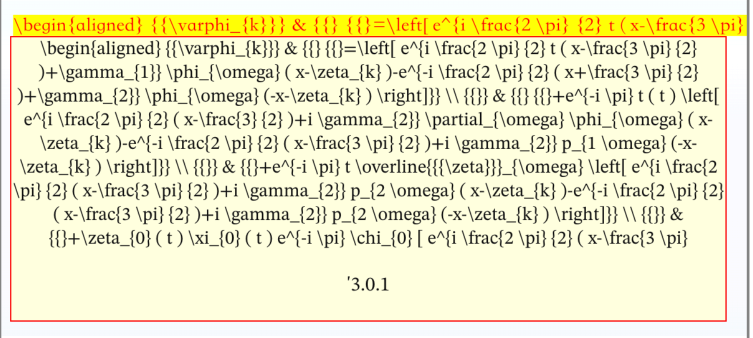
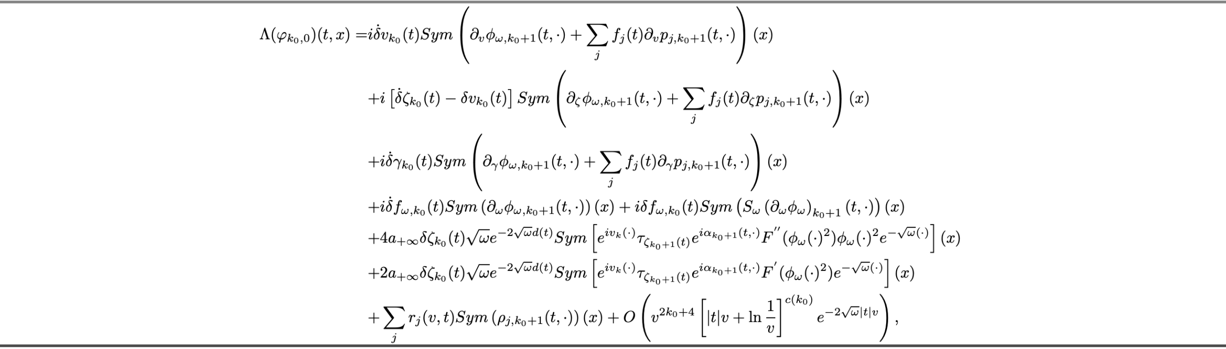
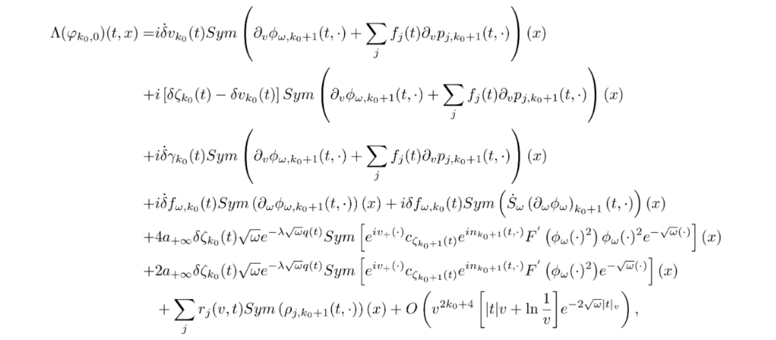
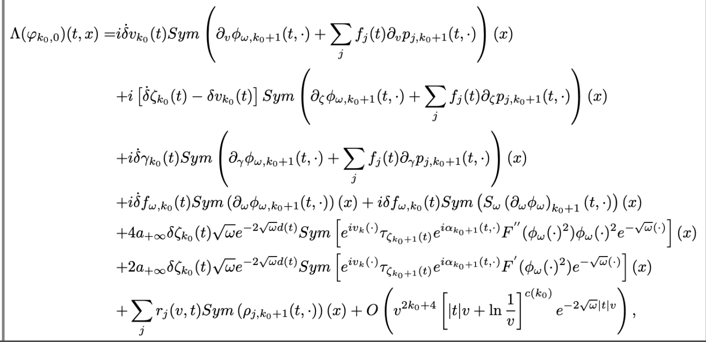
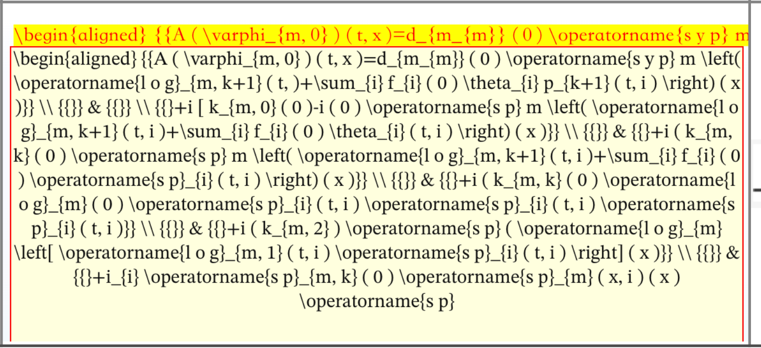
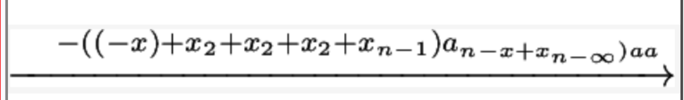
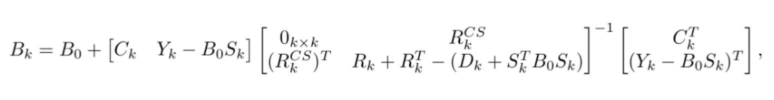
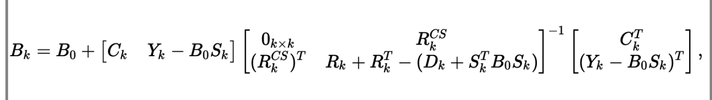
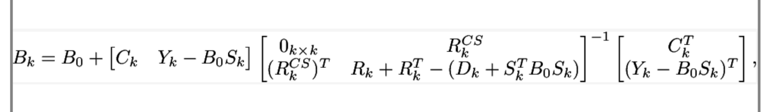
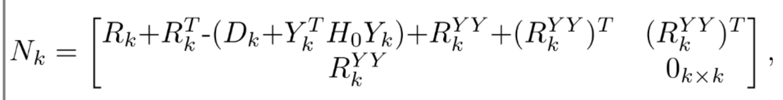
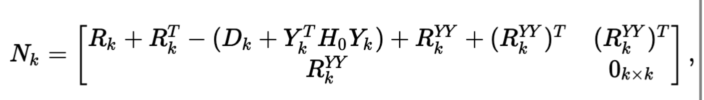
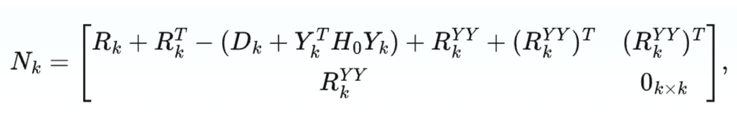
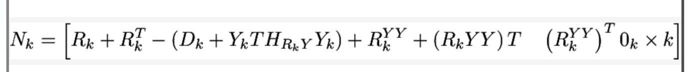
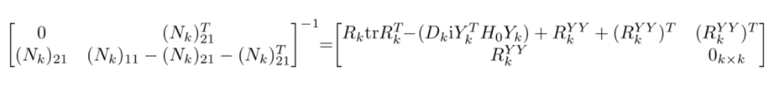
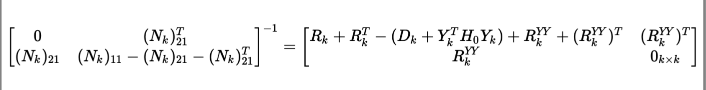
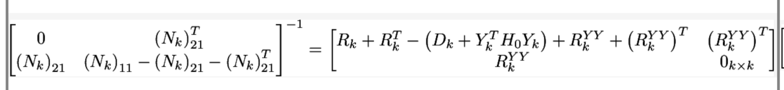
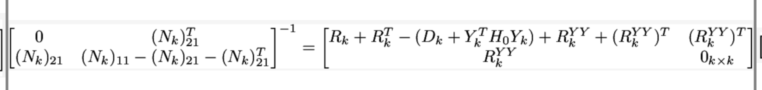
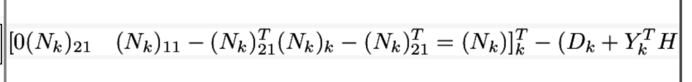
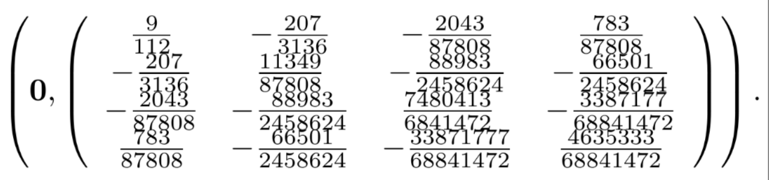
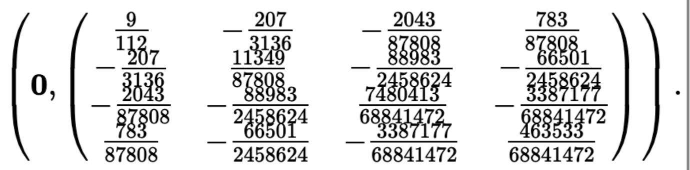
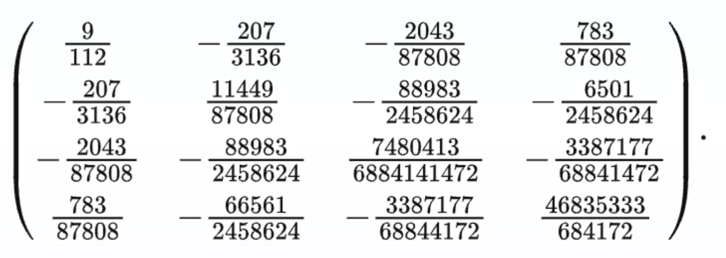
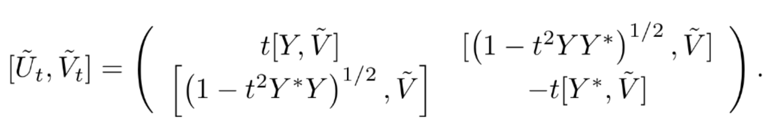
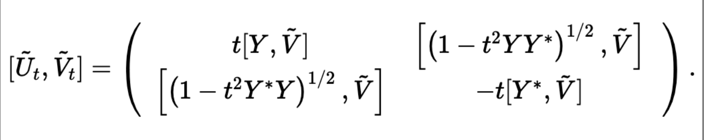
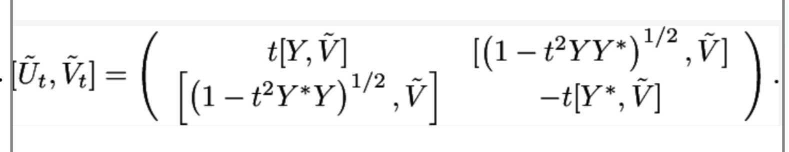
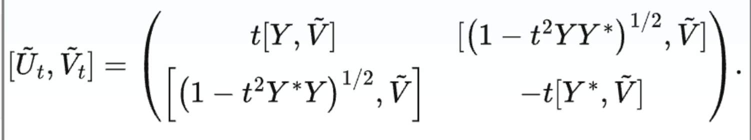
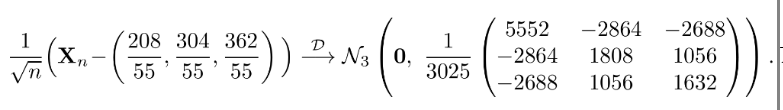
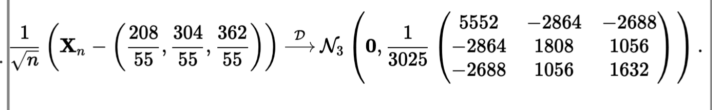
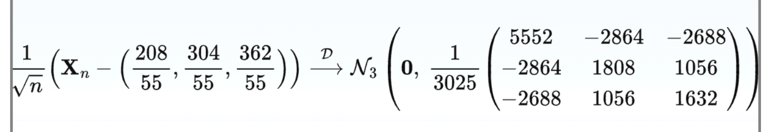
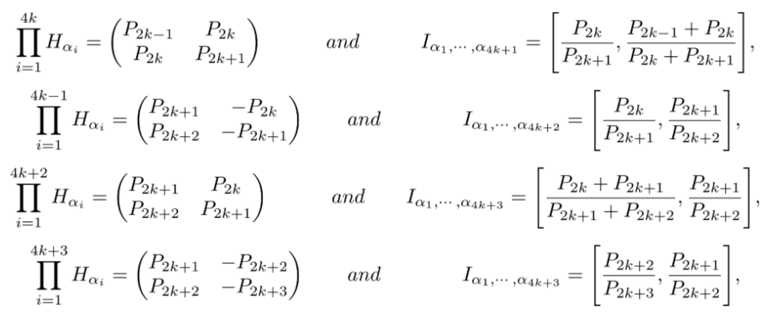
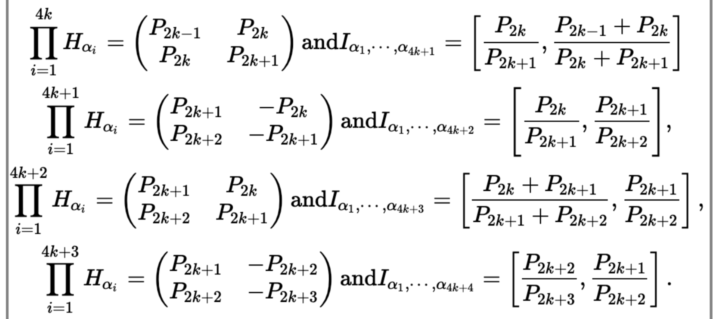
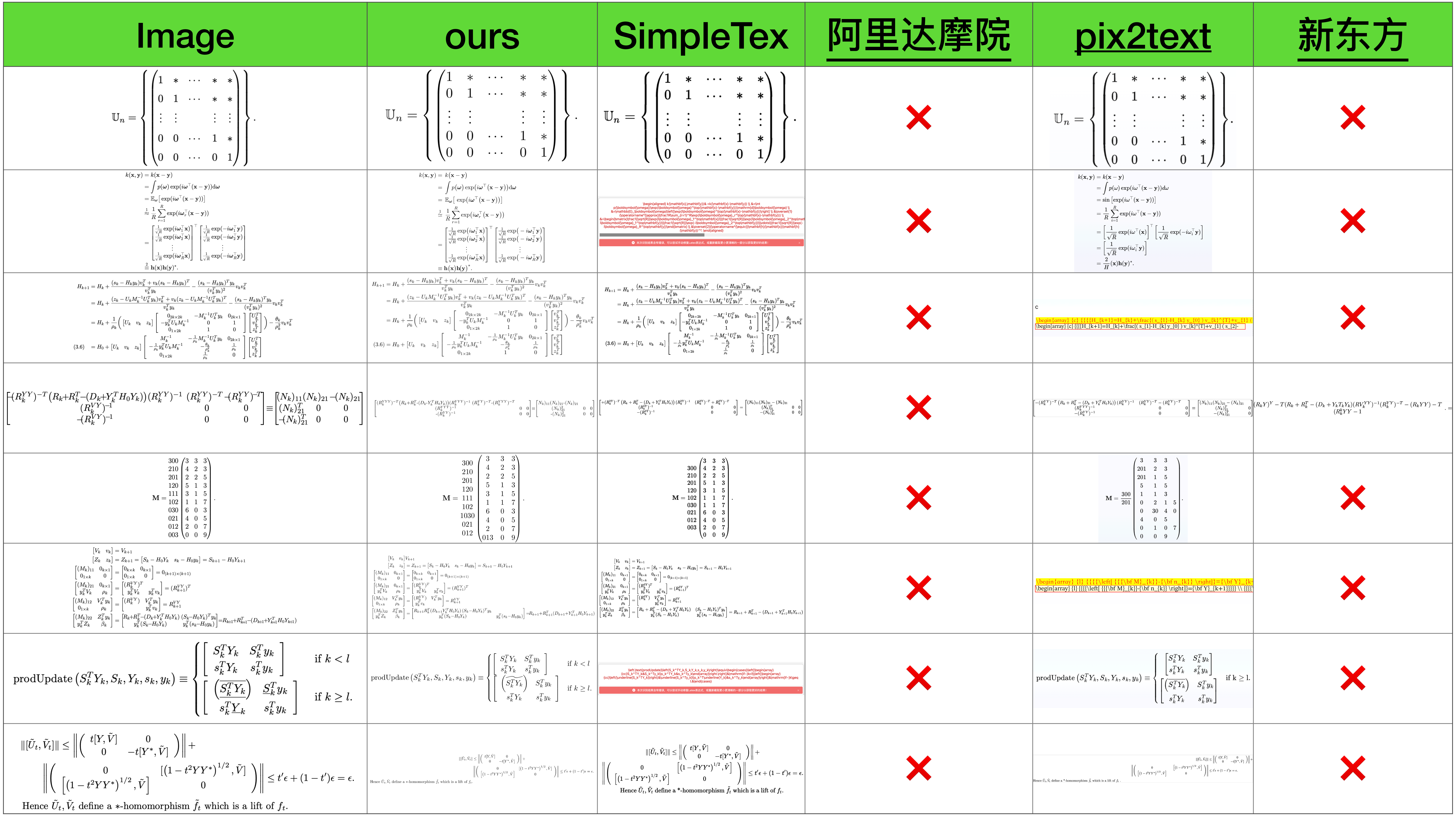
Image	ours	SimpleTex	阿里达摩院	pix2text	新东方
			❌		❌
			❌		❌
			❌		❌
			❌		❌
			❌		❌
			❌		❌
			❌		

Image	ours	SimpleTex	阿里达摩院	pix2text	新东方
$\mathbf{K}_X = \begin{bmatrix} k(\mathbf{x}_1,\mathbf{x}_1) & k(\mathbf{x}_1,\mathbf{x}_2) & \dots & k(\mathbf{x}_1,\mathbf{x}_N) \\ k(\mathbf{x}_2,\mathbf{x}_1) & k(\mathbf{x}_2,\mathbf{x}_2) & \dots & k(\mathbf{x}_2,\mathbf{x}_N) \\ \vdots & \vdots & \ddots & \vdots \\ k(\mathbf{x}_N,\mathbf{x}_1) & k(\mathbf{x}_N,\mathbf{x}_2) & \dots & k(\mathbf{x}_N,\mathbf{x}_N) \end{bmatrix}.$	$\mathbf{K}_{\check{X}} = \begin{bmatrix} k(\mathbf{x}_1,\mathbf{x}_1) & k(\mathbf{x}_1,\mathbf{x}_2) & \dots & k(\mathbf{x}_1,\mathbf{x}_N) \\ k(\mathbf{x}_2,\mathbf{x}_1) & k(\mathbf{x}_2,\mathbf{x}_2) & \dots & k(\mathbf{x}_2,\mathbf{x}_N) \\ \vdots & \vdots & \ddots & \vdots \\ k(\mathbf{x}_N,\mathbf{x}_1) & k(\mathbf{x}_N,\mathbf{x}_2) & \dots & k(\mathbf{x}_N,\mathbf{x}_N) \end{bmatrix}.$	$\mathbf{K}_X = \begin{bmatrix} \boldsymbol{k}(\mathbf{x}_1,\mathbf{x}_1) & \boldsymbol{k}(\mathbf{x}_1,\mathbf{x}_2) & \dots & \boldsymbol{k}(\mathbf{x}_1,\mathbf{x}_N) \\ \boldsymbol{k}(\mathbf{x}_2,\mathbf{x}_1) & \boldsymbol{k}(\mathbf{x}_2,\mathbf{x}_2) & \dots & \boldsymbol{k}(\mathbf{x}_2,\mathbf{x}_N) \\ \vdots & \vdots & \ddots & \vdots \\ \boldsymbol{k}(\mathbf{x}_N,\mathbf{x}_1) & \boldsymbol{k}(\mathbf{x}_N,\mathbf{x}_2) & \dots & \boldsymbol{k}(\mathbf{x}_N,\mathbf{x}_N) \end{bmatrix}.$	✗	$\mathbf{K}_X = \begin{bmatrix} k(\mathbf{x}_1,\mathbf{x}_1) & k(\mathbf{x}_1,\mathbf{x}_2) & \dots & k(\mathbf{x}_1,\mathbf{x}_N) \\ k(\mathbf{x}_2,\mathbf{x}_1) & k(\mathbf{x}_2,\mathbf{x}_2) & \dots & k(\mathbf{x}_2,\mathbf{x}_N) \\ \vdots & \vdots & \ddots & \vdots \\ k(\mathbf{x}_N,\mathbf{x}_1) & k(\mathbf{x}_N,\mathbf{x}_2) & \dots & k(\mathbf{x}_N,\mathbf{x}_N) \end{bmatrix}.$	✗
$R := \mathbb{E}(Y)\mathbb{E}(Y)^T \;=\; p\gamma \begin{bmatrix} w_2^2 E_{n_1} & -w_1 w_2 E_{n_1 \times n_2} \\ -w_1 w_2 E_{n_2 \times n_1} & w_1^2 E_{n_2} \end{bmatrix}.$	$R := \mathbb{E}(Y)\mathbb{E}(Y)^T \;=\; p\gamma \begin{bmatrix} w_2^2 E_{n_1} & -w_1 w_2 E_{n_1 \times n_2} \\ -w_1 w_2 E_{n_2 \times n_1} & w_1^2 E_{n_2} \end{bmatrix}.$	$R := \mathbb{E}(Y)\mathbb{E}(Y)^T \;=\; p\gamma \begin{bmatrix} w_2^2 E_{n_1} & -w_1 w_2 E_{n_1 \times n_2} \\ -w_1 w_2 E_{n_2 \times n_1} & w_1^2 E_{n_2} \end{bmatrix}.$	$R := \mathbb{E}(Y)\mathbb{E}(Y)^T \;=\; p\gamma \begin{bmatrix} w_2^2 E_{n_1} & -w_1 w_2 E_{n_1 \times n_2} \\ -w_1 w_2 E_{n_2 \times n_1} & w_1^2 E_{n_2} \end{bmatrix}.$	$R := \mathbb{E}(Y)\mathbb{E}(Y)^T \;=\; p\gamma \begin{bmatrix} w_2^2 E_{n_1} & -w_1 w_2 E_{n_1 \times n_2} \\ -w_1 w_2 E_{n_2 \times n_1} & w_1^2 E_{n_2} \end{bmatrix}.$	✗
$\begin{pmatrix} \kappa_1 \\ \kappa_2 \\ \kappa_3 \\ \vdots \\ \kappa_{n-1} \end{pmatrix} = \begin{pmatrix} 2 & -1 & 0 & 0 & \dots & 0 \\ -1 & 2 & -1 & 0 & \dots & 0 \\ 0 & -1 & 2 & -1 & \dots & 0 \\ \vdots & \vdots & \vdots & \vdots & \ddots & \vdots \\ 0 & 0 & \dots & 0 & -1 & 2 \end{pmatrix} \begin{pmatrix} \alpha_1 \\ \alpha_2 \\ \alpha_3 \\ \vdots \\ \alpha_{n-1} \end{pmatrix}.$	$\begin{pmatrix} \kappa_1 \\ \kappa_2 \\ \kappa_3 \\ \vdots \\ \kappa_{n-1} \end{pmatrix} = \begin{pmatrix} 2 & -1 & 0 & 0 & \dots & 0 \\ -1 & 2 & -1 & 0 & \dots & 0 \\ 0 & -1 & 2 & -1 & \dots & 0 \\ \vdots & \vdots & \vdots & \vdots & \ddots & \vdots \\ 0 & 0 & \dots & 0 & -1 & 2 \end{pmatrix} \begin{pmatrix} \alpha_1 \\ \alpha_2 \\ \alpha_3 \\ \vdots \\ \alpha_{n-1} \end{pmatrix}.$	$\begin{pmatrix} \kappa_1 \\ \kappa_2 \\ \kappa_3 \\ \vdots \\ \kappa_{n-1} \end{pmatrix} = \begin{pmatrix} 2 & -1 & 0 & 0 & \dots & 0 \\ -1 & 2 & -1 & 0 & \dots & 0 \\ 0 & -1 & 2 & -1 & \dots & 0 \\ \vdots & \vdots & \vdots & \vdots & \ddots & \vdots \\ 0 & 0 & \dots & 0 & -1 & 2 \end{pmatrix} \begin{pmatrix} \alpha_1 \\ \alpha_2 \\ \alpha_3 \\ \vdots \\ \alpha_{n-1} \end{pmatrix}.$	$\begin{pmatrix} \varkappa_1 \\ \varkappa_2 \\ \varkappa_3 \\ \vdots \\ \varkappa_{n-1} \end{pmatrix} = \begin{pmatrix} 2 & -1 & 0 & 0 & \cdots & 0 \\ -1 & 2 & -1 & 0 & \cdots & 0 \\ 0 & -1 & 2 & -1 & \cdots & 0 \\ \vdots & \vdots & \vdots & \vdots & \ddots & \vdots \\ 0 & 0 & \cdots & 0 & -1 & 2 \end{pmatrix} \begin{pmatrix} \alpha_1 \\ \alpha_2 \\ \alpha_3 \\ \alpha_{n-1} \end{pmatrix}.$	$\begin{pmatrix} \kappa_1 \\ \kappa_2 \\ \kappa_3 \\ \vdots \\ \kappa_{n-1} \end{pmatrix} = \begin{pmatrix} 2 & -1 & 0 & 0 & \dots & 0 \\ -1 & 2 & -1 & 0 & \dots & 0 \\ 0 & -1 & 2 & -1 & \dots & 0 \\ \vdots & \vdots & \vdots & \vdots & \ddots & \vdots \\ 0 & 0 & \dots & 0 & -1 & 2 \end{pmatrix} \begin{pmatrix} \alpha_1 \\ \alpha_2 \\ \alpha_3 \\ \vdots \\ \alpha_{n-1} \end{pmatrix}.$	✗
$H_k = H_0 + \begin{bmatrix} S_k & H_0 Y_k \end{bmatrix} \begin{bmatrix} R_k^{-T}(D_k + Y_k^T H_0 Y_k) R_k^{-1} & -R_k^{-T} \\ -R_k^{-1} & 0 \end{bmatrix} \begin{bmatrix} S_k^T \\ Y_k^T H_0 \end{bmatrix}$	$H_k = H_0 + \begin{bmatrix} S_k & H_0 Y_k \end{bmatrix} \begin{bmatrix} R_k^{-T}(D_k + Y_k^T H_0 Y_k) R_k^{-1} & -R_k^{-T} \\ -R_k^{-1} & 0 \end{bmatrix} \begin{bmatrix} S_k^T \\ Y_k^T H_0 \end{bmatrix}$	$H_k = H_0 + \begin{bmatrix} S_k & H_0 Y_k \end{bmatrix} \begin{bmatrix} R_k^{-T}(D_k + Y_k^T H_0 Y_k) R_k^{-1} & -R_k^{-T} \\ -R_k^{-1} & 0 \end{bmatrix} \begin{bmatrix} S_k^T \\ Y_k^T H_0 \end{bmatrix}$	✗	$H_k = H_0 + \begin{bmatrix} S_k & H_0 Y_k \end{bmatrix} \begin{bmatrix} R_k^{-T}(D_k + Y_k^T H_0 Y_k) R_k^{-1} & -R_k^{-T} \\ -R_k^{-1} & 0 \end{bmatrix} \begin{bmatrix} S_k^T \\ Y_k^T H_0 \end{bmatrix}$	✗
$M_1^{-1} = \begin{bmatrix} 0 & v_0^T y_0 \\ y_0^T v_0 & s_0^T y_0 - y_0^T H_0 y_0 \end{bmatrix}^{-1} = \frac{-1}{(v_0^T y_0)^2} \begin{bmatrix} s_0^T y_0 - y_0^T H_0 y_0 & -v_0^T y_0 \\ -y_0^T v_0 & 0 \end{bmatrix}$	$M_1^{-1} = \begin{bmatrix} 0 & v_0^T y_0 \\ y_0^T v_0 & s_0^T y_0 - y_0^T H_0 y_0 \end{bmatrix}^{-1} = \frac{-1}{(v_0^T y_0)^2} \begin{bmatrix} s_0^T y_0 - y_0^T H_0 y_0 & -v_0^T y_0 \\ -y_0^T v_0 & 0 \end{bmatrix}$	$M_1^{-1} = \begin{bmatrix} 0 & v_0^T y_0 \\ y_0^T v_0 & s_0^T y_0 - y_0^T H_0 y_0 \end{bmatrix}^{-1} = \frac{-1}{(v_0^T y_0)^2} \begin{bmatrix} s_0^T y_0 - y_0^T H_0 y_0 & -v_0^T y_0 \\ -y_0^T v_0 & 0 \end{bmatrix}$	✗	$M_1^{-1} = \begin{bmatrix} 0 & v_0^T y_0 \\ y_0^T v_0 & s_0^T y_0 - y_0^T H_0 y_0 \end{bmatrix}^{-1} = \frac{-1}{(v_0^T y_0)^2} \begin{bmatrix} s_0^T y_0 - y_0^T H_0 y_0 & -v_0^T y_0 \\ -y_0^T v_0 & 0 \end{bmatrix}$	✗
$\begin{bmatrix} M_k^{-1} & -\frac{1}{\rho_k} M_k^{-1} U_k^T y_k \\ -\frac{1}{\rho_k} y_k^T U_k M_k^{-1} & -\frac{\theta_k}{\rho_k^2} \end{bmatrix} = \begin{bmatrix} M_k - \frac{1}{\beta_k} U_k^T y_k y_k^T U_k & -\frac{\rho_k}{\beta_k} U_k^T y_k \\ -\frac{\rho_k}{\beta_k} y_k^T U_k & -\frac{\rho_k^2}{\beta_k} \end{bmatrix}^{-1}$	$\begin{bmatrix} M_k^{-1} & -\frac{1}{\rho_k} M_k^{-1} U_k^T y_k \\ -\frac{1}{\rho_k} y_k^T U_k M_k^{-1} & -\frac{\theta_k}{\rho_k^2} \end{bmatrix} = \begin{bmatrix} M_k - \frac{1}{\beta_k} U_k^T y_k y_k^T U_k & -\frac{\rho_k}{\beta_k} U_k^T y_k \\ -\frac{\theta_k}{\beta_k} y_k^T U_k & -\frac{\rho_k^2}{\beta_k} \end{bmatrix}^{-1}$	$\begin{bmatrix} \boldsymbol{M}_k^{-1} & -\frac{1}{\rho_k} \boldsymbol{M}_k^{-1} \boldsymbol{U}_k^T \boldsymbol{y}_k \\ -\frac{1}{\rho_k} \boldsymbol{y}_k^T \boldsymbol{U}_k \boldsymbol{M}_k^{-1} & -\frac{\theta_k}{\rho_k^2} \end{bmatrix} = \begin{bmatrix} \boldsymbol{M}_k - \frac{1}{\beta_k} \boldsymbol{U}_k^T \boldsymbol{y}_k \boldsymbol{y}_k^T \boldsymbol{U}_k & -\frac{\rho_k}{\beta_k} \boldsymbol{U}_k^T \boldsymbol{y}_k \\ -\frac{\rho_k}{\beta_k} \boldsymbol{y}_k^T \boldsymbol{U}_k & -\frac{\rho_k^2}{\beta_k} \end{bmatrix}^{-1}$	$\begin{bmatrix} M_k^{-1} & -\frac{1}{\rho_k} M_k^{-1} U_k^T y_k \\ -\frac{1}{\rho_k} y_k^T U_k M_k^{-1} & -\frac{\theta_k}{\rho_k^2} \end{bmatrix} = \begin{bmatrix} M_k - \frac{1}{\beta_k} U_k^T y_k y_k^T U_k & -\frac{\rho_k}{\beta_k} U_k^T y_k \\ -\frac{\rho_k}{\beta_k} y_k^T U_k & -\frac{\rho_k^2}{\beta_k} \end{bmatrix}^{-1}$	$\begin{bmatrix} M_k^{-1} & -\frac{1}{\rho_k} M_k^{-1} U_k^T y_k \\ -\frac{1}{\rho_k} y_k^T U_k M_k^{-1} & -\frac{\theta_k}{\rho_k^2} \end{bmatrix} = \begin{bmatrix} M_k - \frac{1}{\beta_k} U_k^T y_k y_k^T U_k & -\frac{\rho_k}{\beta_k} U_k^T y_k \\ -\frac{\rho_k}{\beta_k} y_k^T U_k & -\frac{\rho_k^2}{\beta_k} \end{bmatrix}^{-1}$	✗
$M_k^{-1} = \begin{bmatrix} -(R_k^{VY})^{-T}(R_k + R_k^T - (D_k + Y_k^T H_0 Y_k))(R_k^{VY})^{-1} & (R_k^{VY})^{-T} \\ (R_k^{VY})^{-1} & 0_{k \times k} \end{bmatrix},$	$M_k^{-1} = \begin{bmatrix} -(R_k^{VY})^{-T}(R_k + R_k^T - (D_k + Y_k^T H_0 Y_k))(R_k^{VY})^{-1} & (R_k^{VY})^{-T} \\ (R_k^{VY})^{-1} & 0_{k \times k} \end{bmatrix},$	$M_k^{-1} = \begin{bmatrix} -(R_k^{VY})^{-T}(R_k + R_k^T - (D_k + Y_k^T H_0 Y_k))(R_k^{VY})^{-1} & (R_k^{VY})^{-T} \\ (R_k^{VY})^{-1} & 0_{k \times k} \end{bmatrix},$	✗	$M_k^{-1} = \begin{bmatrix} -(R_k^{VY})^{-T}(R_k + R_k^T - (D_k + Y_k^T H_0 Y_k))(R_k^{VY})^{-1} & (R_k^{VY})^{-T} \\ (R_k^{VY})^{-1} & 0_{k \times k} \end{bmatrix},$	✗

Image	ours	SimpleTex	阿里达摩院	pix2text	新东方
$B_k = B_0 + [C_k \quad Y_k - B_0 S_k] \begin{bmatrix} 0_{k\times k} & R_k^{CS} \\ (R_k^{CS})^T & R_k + R_k^T - (D_k + S_k^T B_0 S_k) \end{bmatrix}^{-1} \begin{bmatrix} C_k^T \\ (Y_k - B_0 S_k)^T \end{bmatrix},$			✗		✗
$N_k = \begin{bmatrix} R_k+R_k^T-(D_k+Y_k^T H_0 Y_k)+R_k^{YY}+(R_k^{YY})^T & (R_k^{YY})^T \\ R_k^{YY} & 0_{k\times k} \end{bmatrix},$			✗		
$\begin{bmatrix} 0 & (N_k)_{21}^T \\ (N_k)_{21} & (N_k)_{11} - (N_k)_{21} - (N_k)_{21}^T \end{bmatrix}^{-1} = \begin{bmatrix} R_k+R_k^T-(D_k+Y_k^T H_0 Y_k) + R_k^{YY} + (R_k^{YY})^T & (R_k^{YY})^T \\ R_k^{YY} & 0_{k\times k} \end{bmatrix}$					
$\left(\mathbf{0}, \begin{pmatrix} \frac{9}{112} & -\frac{207}{3136} & -\frac{2043}{87808} & \frac{783}{87808} \\ -\frac{207}{3136} & \frac{11349}{87808} & -\frac{88983}{2458624} & -\frac{66501}{2458624} \\ -\frac{2043}{87808} & -\frac{88983}{2458624} & \frac{7480413}{68841472} & -\frac{3387177}{68841472} \\ \frac{783}{87808} & -\frac{66501}{2458624} & -\frac{3387177}{68841472} & \frac{4635333}{68841472} \end{pmatrix}\right).$			✗		✗
$[\tilde{U}_t, \tilde{V}_t] = \begin{pmatrix} t[Y,\tilde{V}] & [(1-t^2YY^*)^{1/2}, \tilde{V}] \\ [(1-t^2Y^*Y)^{1/2}, \tilde{V}] & -t[Y^*, \tilde{V}] \end{pmatrix}.$					✗
$\frac{1}{\sqrt{n}}\left(\mathbf{X}_n - \left(\frac{208}{55}, \frac{304}{55}, \frac{362}{55}\right)\right) \xrightarrow{\mathcal{D}} \mathcal{N}_3\left(\mathbf{0}, \frac{1}{3025}\begin{pmatrix} 5552 & -2864 & -2688 \\ -2864 & 1808 & 1056 \\ -2688 & 1056 & 1632 \end{pmatrix}\right).$			✗		✗
$\begin{aligned} &\prod_{i=1}^{4k} H_{\alpha_i} = \begin{pmatrix} P_{2k-1} & P_{2k} \\ P_{2k} & P_{2k+1} \end{pmatrix} \quad \text{and} \quad I_{\alpha_1,\cdots,\alpha_{4k+1}} = \left[\frac{P_{2k}}{P_{2k+1}}, \frac{P_{2k-1}+P_{2k}}{P_{2k}+P_{2k+1}}\right], \\ &\prod_{i=1}^{4k+1} H_{\alpha_i} = \begin{pmatrix} P_{2k+1} & -P_{2k} \\ P_{2k+2} & -P_{2k+1} \end{pmatrix} \quad \text{and} \quad I_{\alpha_1,\cdots,\alpha_{4k+2}} = \left[\frac{P_{2k}}{P_{2k+1}}, \frac{P_{2k+1}}{P_{2k+2}}\right], \\ &\prod_{i=1}^{4k+2} H_{\alpha_i} = \begin{pmatrix} P_{2k+1} & P_{2k} \\ P_{2k+2} & P_{2k+1} \end{pmatrix} \quad \text{and} \quad I_{\alpha_1,\cdots,\alpha_{4k+3}} = \left[\frac{P_{2k}+P_{2k+1}}{P_{2k+1}+P_{2k+2}}, \frac{P_{2k+1}}{P_{2k+2}}\right], \\ &\prod_{i=1}^{4k+3} H_{\alpha_i} = \begin{pmatrix} P_{2k+1} & -P_{2k+2} \\ P_{2k+2} & -P_{2k+3} \end{pmatrix} \quad \text{and} \quad I_{\alpha_1,\cdots,\alpha_{4k+4}} = \left[\frac{P_{2k+2}}{P_{2k+3}}, \frac{P_{2k+1}}{P_{2k+2}}\right]. \end{aligned}$			✗		✗



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