你好，LaTeX！这是 XeLaTeX 自测。我是泪花花。

1 最简单转换

1.1 矩层级方程

$$\Psi^{(k)}(s,t) = s\frac{\partial}{\partial s}\ln F^{(k)}(s,t) = \sum_{m=1}^{\infty} \varkappa_m{}^{(k)}(t)\, s^m, F^{(k)}(s,t) = \sum_{m=0}^{\infty} A_m{}^{(k)}(t)\frac{s^m}{m!},$$

@GPT − 5完成方程代入上述级数匹配s^m项系数：

$$\dot{\varkappa}_1^{(k)} = -A\varkappa_1^{(k)} - B\left(\varkappa_2^{(k)} + \left(\varkappa_1{}^{(k)}\right)^2\right) + C + D(\varkappa_1^{(j)} - \varkappa_1^{(k)}),$$

$$\dot{\varkappa}_2^{(k)} = -2A\varkappa_2^{(k)} - B\left(4\varkappa_3^{(k)} + 4\varkappa_1{}^{(k)}\varkappa_2{}^{(k)}\right) + D\left((\varkappa_2^{(j)} - \varkappa_2^{(k)}) + \left(A_1^{(j)} - A_1^{(k)}\right)(\varkappa_1^{(j)} - \varkappa_1^{(k)})\right).$$

其中$R(s,t) \equiv \dfrac{F^{(j)}(s,t)}{F^{(k)}(s,t)} = \displaystyle\sum_{n=0}^{\infty} r_n(t)\, s^n$, 系数$r_n$由幂级数除法确定:

$$r_0 = \frac{A_0^{(j)}}{A_0^{(k)}} = 1, r_1 = \frac{A_1^{(j)}}{A_0^{(k)}} - r_0\frac{A_1^{(k)}}{A_0^{(k)}} = A_1^{(j)} - A_1^{(k)},$$