1 Example `FoxH32-21-Z.wls`

File content

Fox H-function

$$H_{2,3}^{2,1}\left(\cdot\left|\begin{array}{l}(1,1),(\lceil\beta\rceil,\beta)\\ \left(\frac{d}{2},\frac{\alpha}{2}\right),(1,1),\left(1,\frac{\alpha}{2}\right)\end{array}\right.\right)$$

$$H_{2,3}^{2,1}\left(\cdot\left|\begin{array}{c|c}(1,1) & (\lceil\beta\rceil,\beta)\\ \hline \left(\frac{d}{2},\frac{\alpha}{2}\right),(1,1) & \left(1,\frac{\alpha}{2}\right)\end{array}\right.\right)$$

Summary

$$\begin{aligned}a^* &= 2-\beta\\ \Delta &= \alpha-\beta\\ \delta &= 2^{-\alpha}\left(2^{\alpha/2}\alpha^{\alpha/2}+\alpha^{\alpha}\right)\beta^{-\beta}\\ \mu &= \frac{1}{2}(-2\lceil\beta\rceil+d+1)\\ a_1^* &= \frac{1}{2}(\alpha-2\beta+2)\\ a_2^* &= 1-\frac{\alpha}{2}\\ \xi &= \frac{1}{2}(-2\lceil\beta\rceil+d+2)\\ c^* &= \frac{1}{2}\end{aligned}$$

Poles 1. First eight poles from upper front list

$$a_{i,k} = \left(\begin{array}{cccccccc}0 & 1 & 2 & 3 & 4 & 5 & 6 & 7\end{array}\right)$$

2. First eight poles from lower front list

$$b_{j,\ell} = \begin{pmatrix} -\frac{d}{\alpha} & -\frac{d+2}{\alpha} & -\frac{d+4}{\alpha} & -\frac{d+6}{\alpha} & -\frac{d+8}{\alpha} & -\frac{d+10}{\alpha} & -\frac{d+12}{\alpha} & -\frac{d+14}{\alpha} \\ -1 & -2 & -3 & -4 & -5 & -6 & -7 & -8 \end{pmatrix}$$

Source This is the fundamental solution to the fractional diffusion equation used, e.g., in [Che+17; CHN19; CE22; CGS22].

References

[CE22] Le Chen and Nicholas Eisenberg. "Interpolating the stochastic heat and wave equations with time-independent noise: solvability and exact asymptotics". In: *Stoch. Partial Differ. Equ. Anal. Comput. (in press)* (Aug. 2022). URL: https://www.arxiv.org/abs/2108.11473.

[CGS22] Le Chen, Yuhui Guo, and Jian Song. "Moments and asymptotics for a class of SPDEs with space-time white noise". In: *preprint arXiv:2206.10069, to appear in Trans. Amer. Math. Soc.* (June 2022). URL: https://www.arxiv.org/abs/2206.10069.

[Che+17] Le Chen et al. "Space-time fractional diffusions in Gaussian noisy environment". In: *Stochastics* 89.1 (2017), pp. 171–206. ISSN: 1744-2508. DOI: 10.1080/17442508.2016.1146282. URL: https://doi.org/10.1080/17442508.2016.1146282.

[CHN19] Le Chen, Yaozhong Hu, and David Nualart. "Nonlinear stochastic time-fractional slow and fast diffusion equations on $\mathbb{R}^d$". In: *Stochastic Process. Appl.* 129.12 (2019), pp. 5073–5112. ISSN: 0304-4149. DOI: 10.1016/j.spa.2019.01.003. URL: https://doi.org/10.1016/j.spa.2019.01.003.