

# 1 Example FoxH32-21-Z.wls

File content

Fox H-function

$$H_{2,3}^{2,1} \left( . \left| \begin{array}{c} (1,1), ([\beta], \beta) \\ (\frac{d}{2}, \frac{\alpha}{2}), (1,1), (1, \frac{\alpha}{2}) \end{array} \right. \right)$$

$$H_{2,3}^{2,1} \left( . \left| \frac{(1,1)}{(\frac{d}{2}, \frac{\alpha}{2}), (1,1)} \right| \frac{([\beta], \beta)}{(1, \frac{\alpha}{2})} \right)$$

Summary

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

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, Guannan Hu, Yaozhong Hu, and Jingyu Huang. “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>.