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## System specific prior knowledge - a key tool to tackle the sign problem

*Thursday 23 January 2025 11:30 (45 minutes)*

Here I present our recently developed strategy to exploit system specific prior knowledge [1], such as space-time symmetries, as a loophole to the computational challenge posed by NP-hard sign problems. As explicit example, I will showcase how complex Langevin simulations of strongly coupled scalar fields [2] can be amended with relevant prior information using learned kernels. Developments towards preservation of space-time symmetries in numerical simulations [3] will be discussed.

[1] D. Alvestad, R. Larsen, A.R. JHEP 04 (2023) 057 [arXiv:2211.15625]

[2] D. Alvestad, A.R., D. Sexty PRD Letter 109 (2024) 3, L031502 [arXiv:2310.08053]

[3] A.R., W.A. Horowitz, J. Nordström [arXiv: 2404.18676]

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