

A functional CLT for the general Brownian motion on the
Half-line

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Abstract

In this work, we establish a Trotter-Kato type theorem. More precisely, we characterize the convergence in distribution of Feller processes by examining the convergence of their generators. The main novelty lies in providing quantitative estimates in the vague topology at any fixed time. As important applications, we deduce functional central limit theorems for random walks on the positive integers with boundary conditions, which converge to Brownian motions on the positive half-line with boundary conditions at zero.

References

- [1] Erhard et al. **A Functional Central Limit Theorem for the General Brownian Motion on the Half-Line**. arXiv preprint arXiv:2408.06830, 2024.

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