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2.2 Heat content

2.3 Numerical methods for solving parabolic PDEs

2.4 Monte Carlo methods for simulating heat content

2.4.1 monte Carlo approximation of integrals

2.4.1.1 Sample size determination: DKW; Cheb

2.4.2 Simulation of particle’s trajectories

2.4.2.1 LRWS

2.4.3 Output Analysis

2.4.3.1 KM estimator & Confidence interval

2.4.3.2 two-sample statistical tests

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3.1 Analytical Results

3.2 Numerical Approximation

3.3 LRWs

3.4 Comparison of LRWs and analytical results

Chapter4: LRWs in Artificial Images — Yujie

4.1 Shape Design

4.1.1 Simple Shapes

4.1.1.1 Shape Description

4.1.1.2 Purpose

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4.1.2.1 Shape Description

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4.3 Conclusion

Chapter5: ERWs in Real Root Images

5.1 Description of ERWs\*

5.2 Images Description

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5.3.1 Distance Matrices (distance function, statistical distance)

5.3.1.1 Bhattacharyya distance

5.3.1.2 Hellinger distance

5.3.1.3 Hausdorff distance

5.3.1.4 Euclidean distance

https://medium.com/analytics-vidhya/various-types-of-distance-metrics-machine-learning-cc9d4698c2da

5.3.2 Mantel tests: compute the correlation between the distance matrices

5.3.3 Procrustes analysis: statistical shape analysis

5.3.3 Statistical Tests for Distance matrices

Chapter6: Conclusion