Randomised Load Balancing on Networks

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Discrete Load Balancing on Networks

Initially: Each node has any number of tokens







Questions

1. How to achieve a small discrepancy as quickly as possible? 2. How well can we approximate the continuous case where load is divisible?

Discrepancy Bounds

Deterministic Rounding (Always Rounding Down)



For large-scale distributed networks, nodes should operate **locally** without global knowledge on the load distribution or topology.

Communication Models







Discrepancy may remain as large as the **diameter**!











Discrepancy = maxload - minload

References

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