

18.100C Lecture 4 Summary

Definition of metric space. Various example (including French railroad metric, Hamming distance).

Theorem 4.1. (*Triangle inequality for the Euclidean norm*) On \mathbb{R}^n , define $\|x\| = \sqrt{x_1^2 + \cdots + x_n^2}$. Then $\|x + y\| \leq \|x\| + \|y\|$.

For general metric spaces: ball neighbourhoods. Open subsets.

Theorem 4.2. *Every ball neighbourhood is an open subset.*

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