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Food for Thought

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Nash's C1 Isometric Embedding Theorem

Abstract:

Riemannian geometry, the study of smooth manifolds and how to define distances and angles on them can be viewed either intrinsically or extrinsically. In this talk, we discuss how Nash unified these views starting with his 1954 paper “C1 Isometric Imbeddings,” where the isometric embedding and the solution to the corresponding system of partial differential equations is constructed as the limit of iteratively defined subsolutions. This technique is cited as one of the first instances of what is now known as convex integration, and is used to construct solutions to many problems in geometry and PDE.

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