

Animascience Science News - December 2024

Heaviest antimatter hypernucleus

Hypernuclei = exotic nuclei formed by a mix of protons, neutrons and hyperons

- hyperons: unstable particles containing ≥ 1 quark strange
- discovered ~ 70 ago in cosmic rays

Helping to understand the formation of hadrons from the plasma's constituent quarks and gluons and matter/antimatter imbalance

3.5 sigma evidence, based on lead-lead collisions recorded in 2018 by ALICE

- also found 4.5 sigma evidence of anti-hyperhydrogen
- also observed by STAR @ RHIC in August 2024: [link](#)

Matter/antimatter ratio compatible with 1



[CERN ref](#)

Question

- What is the largest area of a shape that can be maneuvered through a unit-width L-shaped corridor?

Cornell University We gratefully acknowledge support from the Simons Foundation, member institutions, and all contributors. [Donate](#)

arXiv > math > arXiv:2411.19826 All fields [Help](#) | [Advanced Search](#)

Mathematics > Metric Geometry

[Submitted on 29 Nov 2024]

Optimality of Gerver's Sofa

Jineon Baek

We resolve the moving sofa problem by showing that Gerver's construction with 18 curve sections attains the maximum area $2.2195\dots$.

Comments: 119 pages, 21 figures

Subjects: **Metric Geometry (math.MG)**; Combinatorics (math.CO); Optimization and Control (math.OC)

MSC classes: 49Q10, 49K15, 52A10, 52A41, 90C26

Cite as: arXiv:2411.19826 [math.MG]

(or arXiv:2411.19826v1 [math.MG] for this version)

<https://doi.org/10.48550/arXiv.2411.19826>

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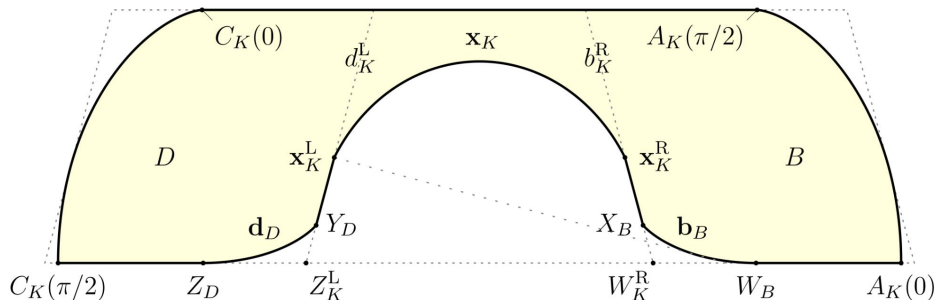
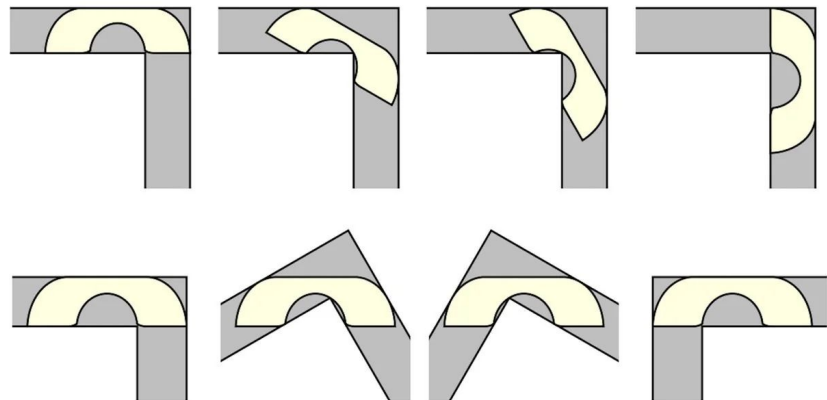
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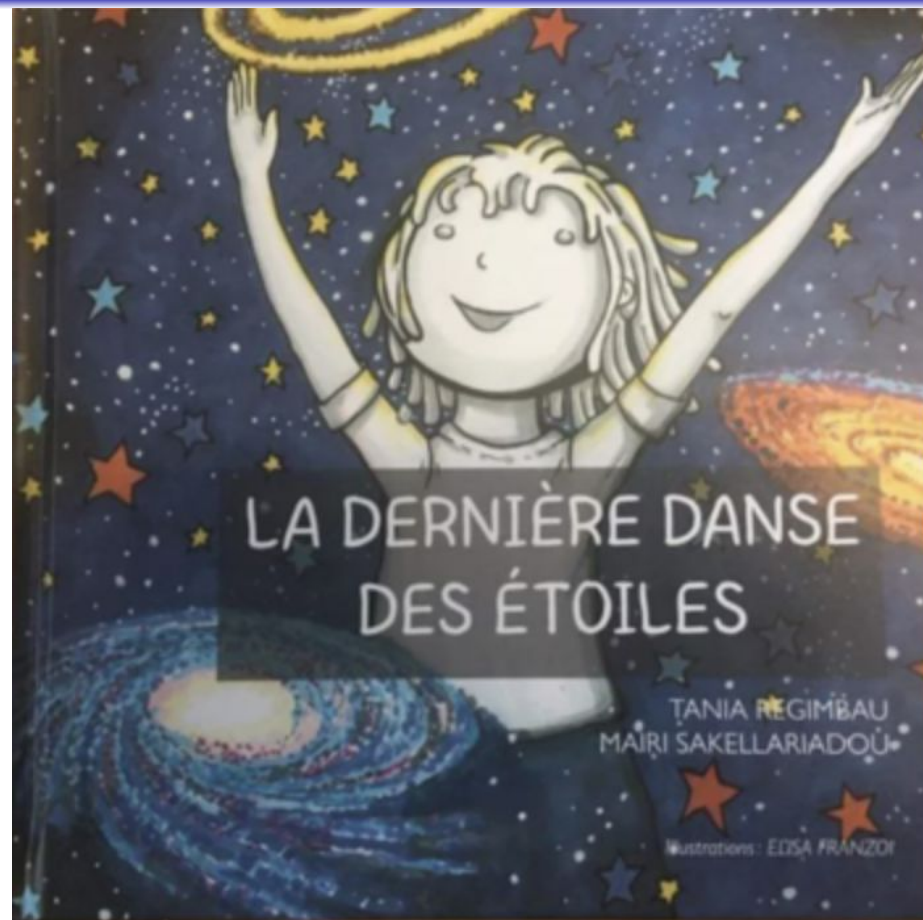
Bookmark



Presentation of the book last week at CERN

<https://indico.cern.ch/event/1470583/>

Tania one of the authors :-)



“Une nouvelle étude montre qu’en personnalisant ses réponses et en puisant dans des ressources très vastes pour donner des arguments précis, un agent conversationnel (GPT-4 turbo) est capable de réduire sur la durée l’adhésion de son interlocuteur à une théorie du complot.” ([Pour la science](#))

“Selon l’Arcom, près de 60 % de la population française croit en au moins une théorie du complot. Pourquoi adhère-t-on à de telles idées ?”

2000 people tested, adhesion decreasing by 20% and effect lasting more than 2 months



L'intelligence artificielle, en particulier les modèles massifs de langage, ont la réputation de propager des « fake news ». De façon étonnante, ces outils pourraient servir pour lutter contre les théories du complot.

Backup slides

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