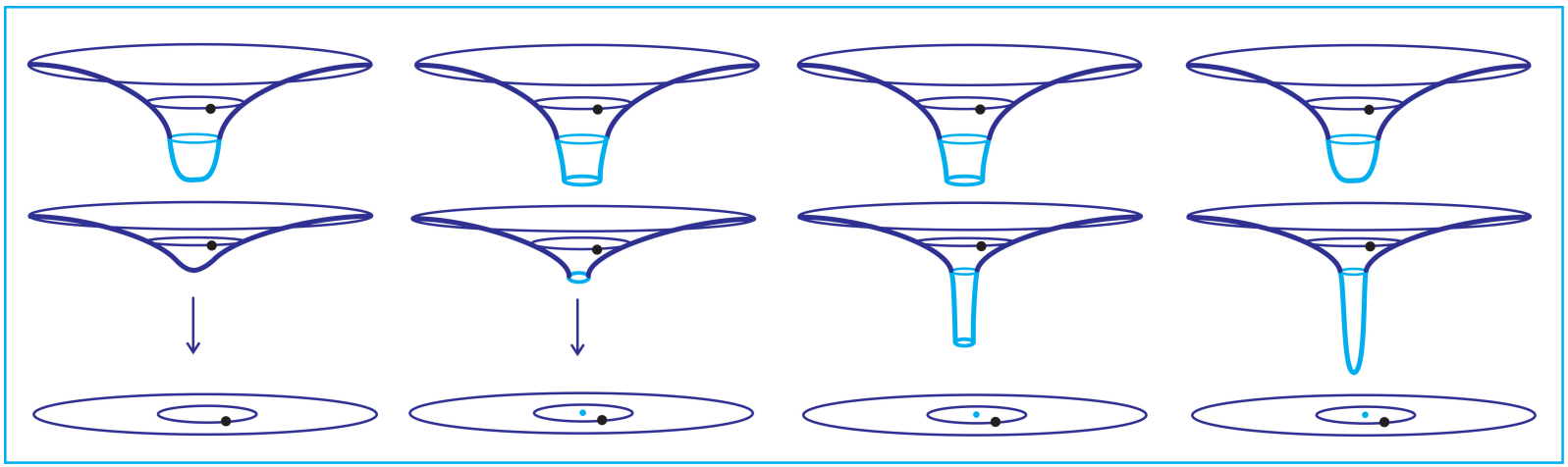
Applying Techniques from Optimal Transport and GMT to Analyze Stability and Limits of Spacelike M in General Relativity

Christina Sormani, City University of New York
Visiting Research Professor at MSRI in OT and GR Programs
Reading Seminar meets every Wednesday 3:15 pm - 5:00 pm



This graphic is of M_j with $R \geq 0$ with $ADM(M_j) \to 0$ and $M_j \xrightarrow{\mathcal{F}} \mathbb{E}^3$

from joint work with Dan Lee to appear in Crelle's journal.

I develop, apply and analyze synthetic geometric notions of convergence like $M_j \xrightarrow{\mathrm{GH}} M$, $M_j \xrightarrow{\mathrm{SW}} M$, $M_j \xrightarrow{\mathcal{F}} M$ which do not depend upon a choice of gauge and can be applied in settings where there is no smooth convergence.

Intrinsic Flat Convergence, $M_j \xrightarrow{\mathcal{F}} M_\infty$, which has cntbly $\mathcal{H}^m$ rectifiable limit spaces,

was first defined in joint work with Stefan Wenger appearing in JDG 2011.

I am currently working on:

* developing a new notion of convergence in joint work with Guofang Wei.
* relating intrinsic flat convergence to H^1 metrics in joint work with Philippe LeFloch.

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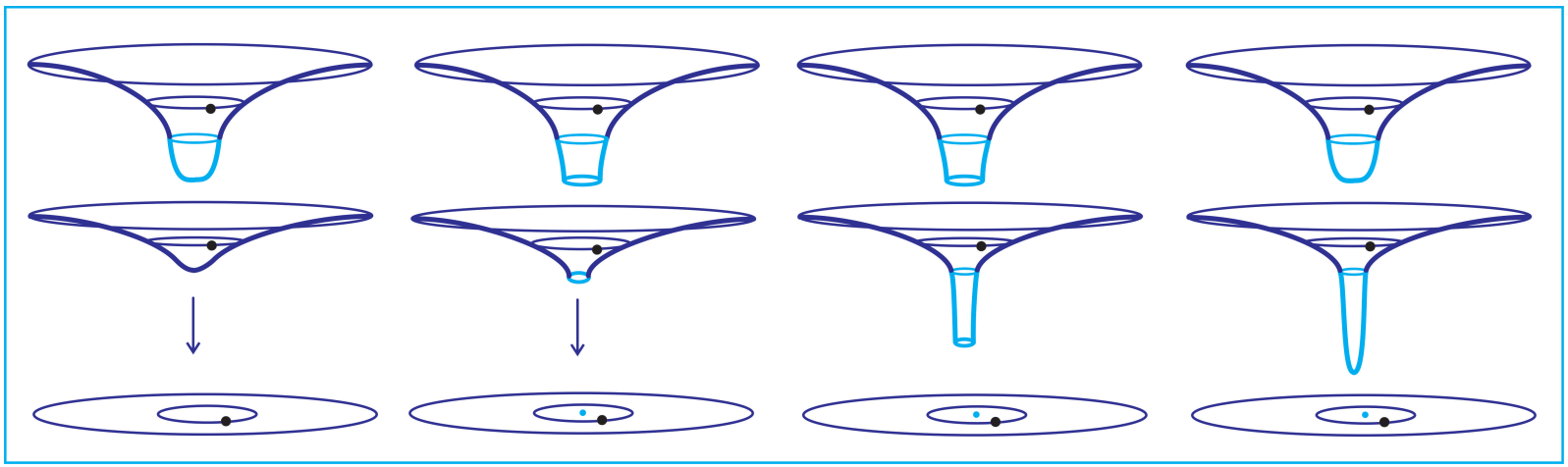

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