

Instantaneous filling of the vacuum for Boltzmann gases in bounded domains

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Let us think of a room divided into two compartments thanks to a sealed wall. One of the two compartments is empty and the other filled with a gas. What does happen when one removes the wall ? The mathematical answer to this question is that the gas will immediately spread into every single nook of the entire room.

In this talk I will present how to prove this behaviour in convex bounded domains from the Boltzmann equation. More precisely, I will give an overview of the analytic and geometric methods leading to the existence of a uniform exponential lower bound for solutions to the Boltzmann equation.

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