Regularity of the Boltzmann Equation in Convex Domains

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Abstract

Consider the Boltzmann equation in a strictly convex domain with diffuse boundary condition. We construct $W^{1,p}$ solutions for $1 < p < 2$. With the aid of a distance function toward the grazing set, we construct weighted $W^{1,p}$ solutions for $2 \leq p \leq \infty$ and classical C^1 solutions away from the grazing set.

This is a joint work with Yan Guo, Daniela Tonon, Ariane Trescases