Analysis Seminar

Hardy—Littlewood—Sobolev inequality for p=1

By

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Abstract: The classical Hardy—Littlewood—Sobolev plays an important role in the analysis since it allows us to estimate L_q norms of lower-order derivatives in terms of the L_p norms of the higher-order ones. Unfortunately, the inequality does not hold in the limit case p=1. The simplest example that breaks the inequality is given by a Dirac delta. In recent years, it was noticed that the inequality becomes true in the limit case, provided one assumes additional requirements that rule out the delta measures. The resulting inequalities are often called Bourgain—Brezis inequalities since the interest in this phenomenon originates from their work. I will try to survey this topic and also draw a connection with questions in geometric measure theory.

Date: Tuesday, November 1, 2022
Time: 16:00-17:00, GMT+3
Place: ZOOM

To request the event link, please send a message to goncha@fen.bilkent.edu.tr