

## **Certain estimates on Bessel integrals and their relevance for a Fourier restriction estimate**

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### **Abstract:**

The classical Thomas Stein restriction estimate in the plane states that  $L^2$  densities on a circle in the plane have  $L^6$  Fourier transforms. It is conjectured that constant densities extremize this  $L^6$  norm under fixed  $L^2$  norm of the density. We present partial progress towards this conjecture, which entails some detailed estimates for integrals of sixfold products of Bessel functions. We discuss various pieces of joint work in progress of several co-author teams including Emanuel Carneiro, Damiano Foschi, and Diogo Oliveira e Silva.