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Hardy Inequalities and Mean Convex Domains

In this talk we present on our recent results on sharp Hardy integral identities and inequalities where the weights are in terms of the distance function to the boundary of a domain. The identities are used to address the existence of minimizers for the corresponding inequalities on weakly mean convex domains. For less regular domains, we obtain Hardy identities and inequalities in terms of the mean distance function to the boundary. This is a joint work with N. Lam and G. Lu.