Attainability of the best constant of Hardy-Sobolev inequalities with full boundary singularities

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摘要： We consider a type of Hardy-Sobolev inequality, whose weight is singular on the whole domain boundary. We are concerned with the attainability of the best constant of such inequality. In dimension two, we link it to a conformally invariant one using the conformal radius of the domain. The best constant of such inequality on a smooth domain is achieved if and only if the domain is non-convex. In higher dimensions, the best constant is achieved if the domain has negative mean curvature somewhere.

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