

GENERALISATIONS OF MERGELYAN'S INEQUALITY

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ABSTRACT

Mergelyan's inequality states that if K is a compact subset of \mathbf{R}^2 and $y \in \mathbf{R}^2$, then $\int_K \frac{dm(x)}{|x - y|} \leq 2\sqrt{\pi}\sqrt{Area(K)}$. In this paper we examine the case when K is a set of finite measure in \mathbf{R}^n and when the integrand is raised to a power $\alpha < n$. We also study the case of equality.