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An Extension of the Erdős-Debrunner Inequality to General Power Means

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Abstract: Given the harmonic mean μ of the numbers x_i ($i = 1, 2, 3$) and a $t \in (0, \min\{x_1, x_2, x_3\}/\mu\})$, we determine the best power mean exponents p and q such that $M_p(x_i - t\mu) \leq (1 - t)\mu \leq M_q(x_i - t\mu)$, where p and q only depend on t . Also, for $t > 0$ we similarly handle the estimates $M_p(x_i + t\mu) \leq (1 + t)\mu \leq M_q(x_i + t\mu)$.



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