Summary: Let $G$ be a connected graph of order $n \geq 3$. The remoteness $\rho = \rho(G)$ is the maximum, over all vertices, of the average distance from a vertex to all others. The radius $r = r(G)$ is the minimum, over all vertices, of the eccentricity of a vertex. M. Aouchiche and P. Hansen [Networks 58, No. 2, 95–102 (2011; Zbl 1232.05062)] conjectured that $\rho - r \geq \frac{3-n}{4}$ if $n$ is odd and $\rho - r \geq \frac{2n-n^2}{4(n-1)}$ if $n$ is even. In this paper, we confirm this conjecture. In addition, we completely characterize extremal graphs attaining the lower bound.

Keywords: remoteness; radius; diameter; low bound
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