ON A CLASS OF MEANS OF SEVERAL VARIABLES

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Abstract. The aim of this paper is to solve the comparison and equality problems of \( L \)-conjugate means of \( n \geq 2 \) variables defined by

\[
L^*_{\varphi}(x_1, x_2, \ldots, x_n) := \varphi^{-1}\left(\frac{\varphi(x_1) + \varphi(x_2) + \cdots + \varphi(x_n) - \varphi(L(x_1, x_2, \ldots, x_n))}{n-1}\right),
\]

where \( L : I^n \to I \) is a symmetric mean on the open real interval \( I \) and \( \varphi : I \to \mathbb{R} \) is continuous strictly monotonic function. The homogeneous \( L \)-conjugate means are also described. In the last section, the arithmetic mean is characterized as being the only mean that is conjugate arithmetic and quasiarithmetic.

Key words and phrases: \( L \)-conjugate means, Conjugate arithmetic means, Convexity, Quasiarithmetic means, Power means.

REFERENCES