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Title: On some Hardy type inequalities involving generalized means

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We discuss properties of a natural generalization of Power Means proposed in 1971 by Carlson, Meany and Nelson. For a parameters $k \in \mathbb{N}$; $s, q \in \mathbb{R}$ and a vector $v \in (0, +\infty)^n$, $n \geq k$ they are defined by $\mathcal{P}_s(\mathcal{P}_q(v_{i_1}, \ldots, v_{i_k}) : 1 \leq i_1 < \cdots < i_k \leq n)$ ($\mathcal{P}_s$ denotes the s-th power mean).
We determine when these means satisfy inequalities resembling the classical Hardy inequality within a large part of the parameter space. Moreover we point out a Hardy mean for which an arbitrarily small increment of the parameter q leads to means not being Hardy.

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