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On some versions of Jensen's inequality on operator algebras. (English) Zbl 1053.47505
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Extensions of the Jensen inequality to operator algebras are well-known. If f is an operator convex function and α is a positive unital mapping between two operator algebras, then $\alpha(f(a)) \geq f(\alpha(a))$ for a selfadjoint operator a . In the paper under review, a noncommutative polynomial $W(x, y)$ is considered and the operator inequality $\alpha(W(a, a^*)) \geq W(\alpha(a), \alpha(a^*))$ is obtained under some conditions, for example, $a \mapsto W(a, a^*)$ is assumed to be convex. The technique of 2×2 operator matrices and Stinespring representation is familiar from earlier works on inequalities. A trace inequality of Jensen type is also treated.

MSC:

47A63 Linear operator inequalities
46L10 General theory of von Neumann algebras

Keywords:

Jensen's inequality; noncommutative polynomial; positive linear map

Full Text: [EuDML](#)

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