

LINEAR OPERATORS INEQUALITY FOR n -CONVEX FUNCTIONS AT A POINT

JOSIP PEČARIĆ, MARJAN PRALJAK AND ALFRED WITKOWSKI

Abstract. We study necessary and sufficient conditions on linear operators A and B for inequality $Af \leq Bf$ to hold for every function f that is n -convex at a point.

Mathematics subject classification (2010): 26D99, 26D15.

Keywords and phrases: n -convex functions, n -convex functions at a point, Levinson's inequality.

REFERENCES

- [1] I. A. BALOCH, J. PEČARIĆ AND M. PRALJAK, *Generalization of Levinson's inequality*, J. Math. Inequal., to appear
- [2] I. B. LACKOVIĆ AND P. M. VASIĆ, *Notes on convex functions II: On continuous linear operators defined on a cone of convex functions*, Univ. Beograd. Publ. Elektrotehn. Fak. Ser. Mat. Fiz. No. **602–633** (1978), 53–59.
- [3] N. LEVINSON, *Generalization of an inequality of Ky Fan*, J. Math. Anal. Appl. **8** (1964), 133–134.
- [4] A. MCD. MERCER, *Short proof of Jensen's and Levinson's inequalities*, Math. Gazette **94** (2010), 492–495.
- [5] J. PEČARIĆ, M. PRALJAK AND A. WITKOWSKI, *Generalized Levinson's inequality and exponential convexity*, Opuscula Math. **35**, no. 3 (2015), 397–410.
- [6] J. PEČARIĆ, F. PROSCHAN AND Y. L. TONG, *Convex Functions, Partial Orderings, and Statistical Applications*, Academic Press Inc., San Diego, 1992.
- [7] T. POPOVICIU, *Les fonctions convexes*, Herman et cie, Paris, 1944.
- [8] T. POPOVICIU, *Sur une generalisation des fonctions "spline"*, Math. Struct. Comp. Math.-Math. Modeling, Sofia (1975), 405–410.
- [9] A. WITKOWSKI, *On Levinson's inequality*, Ann. Univ. Paed. Cracov. Stud. Math. **12** (2013), 59–67.