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Robert Niedzialomski* (robert-niedzialomski@uiowa.edu), 818 W Moss Ave Apt 11, Peoria, IL. *On extension of positive definite functions.*

Let $\Omega \subset \mathbb{R}^n$ be an open, symmetric, and convex subset of \mathbb{R}^n . We say that a function $f: \Omega \rightarrow \mathbb{C}$ is positive definite if for any $x_1, \dots, x_m \in (1/2)\Omega$ and any $c_1, \dots, c_m \in \mathbb{C}$ the following holds

$$\sum_{j,k=1}^m f(x_j - x_k) c_j \overline{c_k} \geq 0.$$

Let $f: \Omega \rightarrow \mathbb{C}$ be a continuous and bounded positive definite function with Ω being bounded. We will give necessary and sufficient conditions for f to have an extension to a continuous and bounded positive definite function defined on the entire Euclidean space \mathbb{R}^n . The conditions are formulated in terms of commutativity of some certain self-adjoint operators defined on the reproducing kernel Hilbert space associated to our positive definite function. This is joint work with Palle Jorgensen. (Received September 25, 2012)