Extensions to a Theorem of Jörgens, Calabi, and Pogorelov

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We give some extensions to a theorem of Jörgens, Calabi, and Pogorelov. The theorem of Jörgens, Calabi, and Pogorelov asserts that any classical convex solution to $\det(D^2u) = 1$ in R^n must be a quadratic polynomial. One of our extensions asserts that for any positive Hölder continuous function f in R^n which is $1-$periodic in each variable, any convex solution of $\det(D^2u) = f$ in R^n must be the sum of a quadratic polynomial and a function which is $1-$periodic in each variable.

Presented by YanYan Li