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Egon Schulte* (e.schulte@northeastern.edu), Northeastern University, Department of Mathematics, Boston, MA 02115. *Local Theorems on Delone Sets and Tilings.*

The local detection of a global property in a geometric structure is usually a challenging problem. The Local Theorem for Tilings says that a tiling of Euclidean d -space is tile-transitive (isohedral) if and only if the large enough neighborhoods of tiles (coronas) satisfy certain conditions. This is closely related to the Local Theorem for Delone Sets, which locally characterizes those sets among uniformly discrete sets in d -space which are orbits under a crystallographic group. Both results are of great interest in crystallography. We discuss old and new results from the local theory of Delone sets and tilings. (Received January 05, 2019)