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David Cook II* (dcook8@nd.edu), Department of Mathematics, 255 Hurley Building, University of Notre Dame, Notre Dame, IN 46656-4618, and **Uwe Nagel**. *The weak Lefschetz property for type two monomial algebras.*

We determine which type two monomial algebras in three variables have the weak Lefschetz property in characteristic zero and, in some cases, positive characteristic. The level, characteristic zero case was recently settled by Boij, Migliore, Miró-Roig, Nagel, and Zanello in a surprisingly intricate and lengthy proof. Our proof, which gives the level case as a corollary, uses a connection to the enumeration of signed lozenge tilings of finite regions of the triangular lattice. (Received August 24, 2012)