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David Cook II and **Uwe Nagel*** (uwe.nagel@uky.edu), University of Kentucky, Department of Mathematics, 715 Patterson Office Tower, Lexington, KY 40506. *Monomial ideals and lozenge tilings*. Preliminary report.

We discuss an approach for studying monomial ideals in three variables via lozenge tilings of certain planar regions. It provides combinatorial interpretations for the weak Lefschetz property and the semistability of syzygy bundles.

This is joint work with David Cook II who will discuss an application for level algebras of type two. (Received August 27, 2012)