

1083-13-48

**Louiza Fouli**, Department of Mathematical Sciences, New Mexico State University, Las Cruces, NM 88003, and **Kuei-Nuan Lin\*** ([knlin@math.ucr.edu](mailto:knlin@math.ucr.edu)), Department of Mathematics, University of California, Riverside, Riverside, CA 92521. *Rees Algebras of Square-Free Monomial Ideals.*

We study the defining equations of the Rees algebras of square-free monomial ideals in a polynomial ring over a field. We establish the defining equations of the Rees algebra when an ideal is minimally generated by at most 5 elements. We also provide new classes of ideals of linear type. We propose the construction of a graph, namely the generator graph of an ideal, where the monomial generators serve as vertices for the graph. We show that when an ideal is a square-free monomial ideal and the generator graph of the ideal is the graph of a disjoint union of trees and graphs with unique odd cycles then it is an ideal of linear type. (Received August 08, 2012)