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Ela Celikbas, Emilie Dufresne, Louiza Fouli* (lfouli@nmsu.edu), **Elisa Gorla, Kuei-Nuan Lin, Claudia Polini** and **Irena Swanson**. *Rees algebras of determinantal ideals of sparse matrices*. Preliminary report.

Let $X = (x_{ij})$ be an $m \times n$ sparse matrix of indeterminates, that is a matrix whose entries are either zero or indeterminates, and let I be the ideal of maximal minors of X in a polynomial ring $R = k[x_{ij}]$ over a field k . The Rees algebra of I can be described as the quotient of a polynomial ring by an ideal known as the defining ideal of the Rees algebra. Using the theory of SAGBI bases we obtain information about the Rees algebra of I from the Rees algebra of the initial ideal of I with respect to a monomial order. In particular, we will describe the defining ideal of the Rees algebra of I when X is any $2 \times n$ sparse matrix. We will also discuss various properties of the Rees algebra and the special fiber cone of these ideals. This is joint work with Ela Celikbas, Emilie Dufresne, Elisa Gorla, Kuei-Nuan Lin, Claudia Polini, and Irena Swanson. (Received September 13, 2020)