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Teresa Cortadellas Benitez, Carlos D'Andrea and **Florian Enescu*** (fenescu@gsu.edu),
Department of Mathematics and Statistics, Georgia State University, 30 Pryor Street, Atlanta, GA
30303. *The Free Resolution of Fan Algebras of Principal Ideals in the Plane*. Preliminary report.

Let \mathcal{F} be a fan in \mathbb{R}^m , f_1, \dots, f_n a family of fan-linear maps on \mathcal{F} , and I_1, \dots, I_n ideals in a commutative ring R . Fan algebras are R -algebras associated to this collection of data. They provide an interplay between the geometry and combinatorics of the fan and the algebraic properties of the ideals and fan linear maps. In our talk, we will describe their presentation ideal and free resolution when $m = 2$ and the ideals I_i , $i = 1, \dots, n$, are principal, an important case with applications to the intersection algebra of principal monomial ideals. (Received September 10, 2016)