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H. Charalambous* (hara@math.auth.gr), Department of Mathematics, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece, and **A. Thoma** and **M. Vladioiu**. *Markov Bases of Lattice Ideals*.

Let $L \subset \mathbb{Z}^n$ be a lattice, \mathbb{k} a field, $R = \mathbb{k}[x_1, \dots, x_n]$ and $I_L = \langle x^u - x^v : u - v \in L \rangle$ the corresponding lattice ideal. We partition the set of monomials of R into *fibers*: x^u, x^v are in the same fiber if $u - v \in L$. We generalize the fiber graph construction, from the case where the intersection of L with \mathbb{N}^n is $\mathbf{0}$ and thus all fibers are finite, to all lattices. We use the fiber graphs to characterize minimal generating sets of I_L of minimal cardinality and to give invariants for these generating sets. As an application we characterize all binomial complete intersection lattice ideals. (Received August 19, 2013)