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Classic results of Gerstenhaber and Schack elegantly established that simplicial cohomology is a special case of algebraic cohomology. That is, associated to each triangulable space, there is an associative matrix algebra whose algebraic cohomology is the same as the simplicial cohomology of the original space. These matrix algebras are also Lie algebras and therefore have a Lie algebra cohomology which controls their deformations – as Lie algebras. We find that the latter cohomology is also essentially simplicial and that the deformation theory of these Lie poset algebras is analogous to that of complex analytic manifolds for which it is a small model. (Received August 09, 2015)