1047-05-375 **Kyungyong Lee** (kyungl@purdue.edu) and **Li Li*** (llpku@math.uiuc.edu), Mathematics Department, University of Illinois at Urbana-Champaign, Urbana, IL 61801. *On a minimal set of generators for the ideal of the diagonal locus of $(C^2)^n$.*

The ideal I of the diagonal locus of the affine space $(\mathbb{C}^2)^n$ is a very interesting object in algebra, combinatorics and geometry, for example it is used to define the t,q-Catalan numbers. It has been studied in detail by Haiman in process of proving Macdonald positivity conjecture. Haiman posed the question to find a rule to determine a set of minimal generators of the ideal I. As a partial answer to the question, we provide explicit generators for the ideal I of certain bi-degrees. We also discover a relation between t,q-Catalan numbers and partition numbers as a corollary. (Received February 02, 2009)