1099-47-206 **Wing Suet Li*** (`li@math.gatech.edu`). *Saturated Horn inequalities for submodules and C_0 operators.*

A partition of integers is a (finite) nonincreasing sequence of integers. A triple of partitions (a, b, c) that satisfies the so-called Horn inequalities, a set of inequalities conjectured by A. Horn in 1960 and later the conjecture was proved by the work of Klyachko and Knutson-Tao, describes the eigenvalues of the sum of n by n Hermitian matricies, i.e., Hermitian matrices A, B, C such that $A + B = C$ with a, b, c as the set of eigenvalues of A, B, C respectively. Such triple also describes the Jordan decompositions of a nilpotent matrix T, T resticted to an invarint subspace M, and T compressed to $M^\perp$. More precisely, T is similar to $J(c) := J_{c_1} \oplus \cdots \oplus J_{c_n}$, and $T|M$ is similar to $J(a)$ and $T_{M^\perp}$ is similar to $J(b)$. (Here J_k denotes the Jordan cell of size k with 0 on the diagonal.) This result for nilpotent matrices also has an analogue for operators in the class of C_0. In this talk I will explain, through the intersection of certain Schubert varieties, why the same combinatorics solves the eigenvalue and the Jordan form problems. I will also describe the additional information that we can obtain whenever a Horn inequality saturates. This talk is based on the joint work with H. Bercovici. (Received February 09, 2014)