1018-13-212 **Valery Alexeev** (valery@math.uga.edu), Athens, GA, and **Allen Knutson*** (allenk@math.ucsd.edu), CA. *Gröbner degenerations of subvarieties: subschemes vs. branchvarieties.* Preliminary report.

The Gröbner bases of a reduced projective scheme X correspond to the fixed points on a torus orbit closure $T \cdot I_X$ in a Hilbert scheme parametrizing subschemes of projective space with a fixed Hilbert polynomial. The initial ideals correspond to (usually extremely nonreduced) degenerations of X to monomial subschemes.

I'll describe a moduli space of "branchvarieties" in place of subschemes. Instead of giving up reducedness, one gives up "sub": a branchvariety has a *finite map* to projective space. There is a corresponding theory of Gröbner degenerations which I will describe. (Received March 07, 2006)