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New formulas for Schubert polynomials via bumpless pipe dreams

The last five years have seen many applications of the "bumpless pipe dreams" (BPDs) introduced in Lam-Lee-Shimozono's seminal paper on back stable Schubert polynomials. I will report on joint work with William Fulton, in which we obtain a decomposition of the Schubert polynomial as a sum of "drift polynomials". The new formula has several pleasant features: 1) in many cases, it allows efficient computation of the Schubert polynomial; 2) the constituent drift polynomials have tableau formulas, and can (sometimes) be written naturally as Lindström-Gessel-Viennot determinants; and 3) nearly without change, the same formula computes the enriched Schubert polynomials, which specialize to the back stable ones. I'll also demo some software for working with BPDs.