1001-14-141   **Ravi Vakil*** (`vakil@math.stanford.edu`), Department of Mathematics, Stanford University, Stanford, CA 94305. *Monodromy and Galois groups of Schubert problems.*

Enumerative problems in geometry often have groups attached, which have different interpretations in geometry, arithmetic, and algebra. The geometric interpretation is as follows: if the problem has N solutions, and the conditions are moved about and returned to their starting positions, how can the N solutions be permuted? Schubert problems are the only known enumerative problems that can have unexpectedly small Galois groups; the first such example is due to Derksen. By solving Schubert problems over the rational numbers (and using Schubert induction) we can compute these monodromy groups explicitly; we give examples where it is the full symmetric group, and where it seems to be mysteriously small. This is part of a larger project with Sara Billey. (Received August 20, 2004)