Meeting: 1002, Pittsburgh, Pennsylvania, SS 1A, Special Session on Invariants of Knots and 3-Manifolds

1002-57-232 **Alexander N. Shumakovitch*** (`Shurik@Dartmouth.edu`), Dartmouth College, Department of Mathematics, 6188 Bradley Hall, Hanover, NH 03755-3551. *Rasmussen invariant, Slice-Bennequin Inequality, and sliceness of knots.*

Rasmussen invariant is a recently introduced invariant of knots in S^3 that provides a lower bound on the slice genus. We use properties of this invariant to deduce the Slice-Bennequin Inequality for links. This inequality was originally proved by Lee Rudolph in 1993 using gauge theory. Rasmussen's approach gives rise to the first purely combinatorial proof. We also compute Rasmussen invariant for (strongly) quasipositive knots.

Finally, we use `KhoHo`, a program for computing and studying Khovanov homology, and Knotscape to find all knots with up to 16 crossings that have Alexander polynomial 1 and non-zero Rasmussen invariant. All such knots are known to be topologically locally-flatly slice but are not slice. We verify that most of our examples are not quasipositive. (Received September 14, 2004)