1071-57-211 **Hans U. Boden*** (boden@mcmaster.ca) and **Eric Harper** (harper@cirget.ca). *An SU(n) Casson-Lin invariant for links with n components.*

In 1992, X.-S. Lin introduced a Casson-type invariant $h(K)$ for knots $K \subset S^3$ that counts conjugacy classes of irreducible $SU(2)$ representations of the knot group $G_K = \pi_1(S^3 \smallsetminus K)$ with meridional trace equal to -2. Lin identified $h(K)$ with the signature of the knot, and his approach was generalized to give invariants for other trace conditions and for knots in homology 3-spheres independently by C. Herald in 1997 and by M. Heusener and J. Kroll in 1998. In [Pac. J. Math. **248** (2010), 139–154], E. Harper and N. Saveliev define a Casson-Lin type invariant $h(L)$ for 2-component links $L \subset S^3$ and show $h(L)$ equals the linking number.

This talk is a report on recent joint work with Eric Harper introducing analogous invariants for n-component links $L \subset S^3$. The invariants, denoted $h_{n,d}(L)$, are given for d relatively prime to n and are defined as a signed count of conjugacy classes of certain projectively flat $SU(n)$ invariants of the link group $G_L = \pi_1(S^3 \smallsetminus L)$. The talk will outline the compactness and irreducibility results needed to show that $h_{n,d}(L)$ is well-defined, and further that $h_{n,d}(L)$ vanishes if L is a split link. (Received March 06, 2011)