Meeting: 1001, Evanston, Illinois, SS 20A, Special Session on Representation Theory of Reductive Groups

1001-20-289 **Peter S. Campbell** and **Monica Nevins*** (mnevins@uottawa.ca), Department of Mathematics and Statistics, 585 King Edward Ave., University of Ottawa, Ottawa, ON K1N 6N5, Canada.

Decomposition of Restrictions of Principal Series Representations of p-adic $GL(3)$ to a Maximal Compact Subgroup. Preliminary report.

Consider a principal series representation π of $GL(3,k)$, for k a p-adic field. Let O denote the integer ring of k; then restrict π to the maximal compact subgroup $K = GL(3,O)$. Its decomposition into irreducibles has surprising complexity, at least as it compares with the case of $SL(2,k)$ (recently studied by the second author). We will present our solution, and conjecture the form of the decomposition for $GL(n,k)$, $n > 2$. Finally, we relate this decomposition to ideas from the orbit method. (Received August 29, 2004)