1035-20-976 **Roberto Palomba*** (opalo3rh@umw.edu), **Sean Droms** and **Janusz Konieczny**. *S_n-normal Semigroups of Partial Transformations.*

Let X_n be a finite set with n elements. The semigroup P_n of partial transformations on X_n consists of all functions whose domain and image are included in X_n, with composition as the operation. It includes as its subsemigroups the symmetric group S_n, the full transformation semigroup T_n, and the symmetric inverse semigroup I_n, where S_n, T_n, and I_n consist, respectively, of the permutations, full transformations, and partial 1-1 transformations on X_n. The symmetric group S_n is the group of units of P_n, T_n, and I_n.

A subsemigroup S of P_n is called S_n-normal if it is closed under conjugations by permutations, that is, if for all $a \in S$ and $g \in S_n$, $g^{-1}ag \in S$. This concept generalizes the well-known notion of a normal subgroup. The S_n-normal subsemigroups of T_n were determined in 1976; and the S_n-normal subsemigroups of I_n were described in 1995. We complete the picture by providing a complete classification of the S_n-normal subsemigroups of P_n. In contrast with the classifications for T_n and I_n, the problem of classifying the S_n-normal subsemigroups of P_n does not reduce to finding the S_n-normalizers (S_n-normal semigroups generated by one element). (Received September 18, 2007)