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**Timothy Kohl\*** (tkohl@math.bu.edu), Department of Mathematics and Statistics, Boston University, 111 Cummington Street, Boston, MA 02215. *Hopf Galois Structures Arising from Mutually Normalizing Permutation Groups.*

The Hopf-Galois structures on a Galois extension  $L/K$  with  $G = \text{Gal}(L/K)$  are in direct correspondence with the regular subgroups  $N$  of  $\text{Perm}(G)$  normalized by the left regular representation of  $G$ . We consider how such  $N$  are parametrized as conjugates of a fixed regular subgroup. Furthermore, we consider those structures where the groups  $N$  are subgroups of the holomorph of  $G$  normalized by  $\lambda(G)$  and isomorphic to  $G$ , which are therefore conjugates of  $\lambda(G)$ . We show that one can choose a set of parameters for such  $N$  which form a groupoid within  $\text{Perm}(G)$ , and in some special instances a full group. (Received January 17, 2012)