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Collin Bleak, Martin Kassabov and **Francesco Matucci*** (matucci@math.cornell.edu), 310 Malott Hall, Ithaca, NY 14853. *Structure Theorems for Subgroups of Homeomorphisms Groups of the Unit Circle*. Preliminary report.

We give a classification of the solvable subgroups G of the group $PL_0(S^1)$ of all orientation-preserving piecewise-linear homeomorphisms of the circle, with finitely many breakpoints. The key tool is proving that the rotation number map is a group homomorphism and it is done by relating the dynamics of G and its group structure. Applications include new proofs of known results as the Margulis' theorem on the existence of a G -invariant probability measure on S^1 . (Received September 20, 2007)