1062-05-181   **Tomaž Pisanski*** (`Tomaz.Pisanski@fmf.uni-lj.si`), Jadranska 19, Ljubljana, Slovenia.
Symmetry type graphs. Preliminary report.

A k-orbit map is a map whose automorphism group partitions the set of flags into k orbits. It is known, that each edge-transitive map is a 1-, 2- or 4-orbit map. Symmetry types are a refinement of k-orbit maps. They were used by several researchers. For a long time 14 types of edge-transitive maps have been known (Graver and Watkins; Širan, Tucker and Watkins). Recently k-orbit map were studied by Orbanić, Pellicer and Weiss, for $k \leq 4$. We present symmetry type graphs as a tool for classifying symmetry types of maps. Using this tool, we present all types of k-orbit maps for $k = 5, 6, 7$. In particular we determine k-orbit maps that are medials of other maps. In passing, we mention how to extend properly the Wilson census of rotary and chiral maps in order to close it under the "hexagon". Symmetry types may be extended from maps to polytopes. The approach taken here is based upon graphs (Dress) and not upon groups as in recent work on this topic (Hubard, Orbanić, Pellicer, Weiss). In particular, we may describe the concept of chirality of lesser symmetry in terms of symmetry type graphs. The talk is based on a joint work in progress with several researchers, including Alen Orbanić, Maria del Rio Francos, and Deborah Oliveros. (Received August 07, 2010)