Weak sofic and weak hyperlinear groups

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Abstract: The notion of a sofic group was introduced by B. Weiss and M. Gromov (who called these groups initially subamenable) in the connection with the following problem posed by W. Gottschalk: "If for every group G the injectivity of cellular automata over G implies their surjectivity?" The class of sofic groups is the largest class of groups for which the above problem is solved. Some other problems have been solved for the class of sofic groups (e.g. the Connes Embedding Cojecture, the algebraic eigenvalue conjecture). It is still an open problem if there exists a non-sofic group. In 2008 the apparently more general class of weakly sofic groups was introduced by L. Glebsky and L. M. Rivera, where instead of the Hamming metric on symmetric groups one uses general bi-invariant metrics on finite groups. During my talk I will give an alternative approach to weak sofic groups and define weak hyperlinear groups. I will show how one can use that approach to prove some facts about weak-sofic groups. If time permits, I will discuss finite covers and topological universal covers of symplectic groups in the context of (w-)sofic groups.

The introductory talk by Simone Virili.