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Rögnvaldur G. Möller* (roggi@hi.is), Science Institute, University of Iceland, Dunhaga 5, Reykjavik, Iceland. *Minimal valency of an Abels-Cayley graph and group properties*. Preliminary report.

Let G be a totally disconnected locally compact compactly generated group. An Abels–Cayley graph for G is a locally finite connected graph that G acts transitively on such that the stabilisers of vertices are compact open subgroups. Many results for finitely generated groups connecting Cayley graphs and group structure have analogues involving Abels–Cayley graphs.

Some years ago George A. Willis asked me about the connections between the minimal valency of an Abels–Cayley graph for G and properties of the topological group G . In this talk I will describe some thought on this question, e.g. characterize those groups where the minimal valency is 2, describe special properties of groups where the minimal valency is 3 and show lower bounds for the minimal valency based on the modular function and the scale function on G .

Some of these results are contained in the master thesis of Arnbjörg Soffía Árnadóttir at the University of Iceland. (Received March 13, 2017)