1060-20-146   **Philipp Rothmaler*** (`philipp.rothmaler@bcc.cuny.edu`). *Pseudofinite abelian groups.*
It is by now quite standard in model theory to call a structure in an axiomatizable class V pseudofinite if it is a model of the first-order theory of all finite structures from V. Equivalently, a structure G in V is pseudofinite iff every first-order sentence true in G is true in some finite structure from V. Yet another way of saying this is that G be elementarily equivalent to an ultraproduct of finite structures from V. Prominent examples are pseudofinite fields as described by Ax in the late 60's. Less is known about pseudofinite groups. (The compactness theorem of first-order logic yields at once that there are infinite such groups.) It is surprisingly little known that there is a complete description of pseudofinite abelian groups due to Basarab in the 70's. Similar "pseudo-notions" arise when finiteness is replaced by other concept like torsion etc. I will discuss all this together with related concepts and results from joint work with Ivo Herzog. (Received March 28, 2010)