

One of the recently most studied subsets of Boolean functions are Horn functions. There is quite a lot of open problems which concern their minimization (finding the smallest equivalent representation). As Kronus [11] has expanded knowledge in the area of Horn minimization by unusual measure (number of source sets) based on the theory of relational databases, in a similar way this work is trying to expand this knowledge by another three unusual measures (and their properties, relations) based on the theory of hypergraphs.

Another recently studied problem is Horn minimization with a constraint on the number of literals in one term. Up to now the best result was a proof that Horn minimization remains intractable even when this number is restricted to be at most three. After pointing out a mistake in this proof, a new problem of finding HV-cover will be presented, which is equivalent to the studied one. Altogether this could be the base for future correction of the original proof. Then the biggest contribution of this work will be filling in the just created gap in the theory by a weaker proposition, that Horn minimization problem remains intractable even with a restriction on the number of literals per term to be at most four.