The Analysis of Magnetic Flux in Single and Couple Magnet Systems

Peter Vrábel[1, b)] and Jozef Kravčák[1, a)]

[1]*Department of Physics, Faculty of Electrical Engineering and Informatics, Technical University of Košice, Park Komenského 2, 042 00 Košice, Slovakia*

[a)] *Corresponding author: jozef.kravcak@tuke.sk*
[b)] *peter.vrabel.3@tuke.sk*

Abstract. In presented article we pay attention to a mathematical model and measurements of basic magnetic properties of single and couple magnet system, e.g. measurement of magnetic flux and flux density. Suggested theoretical formula with net magnetic moment m as a parameter fits very well experimental data. The obtain values of m provide not only any quality characteristic of a single permanent magnet, but in case of combination of permanent magnet+soft magnetic high permeable spacer the increasing values of m proves that the magnetic flux is optimally conducted far from the permanent magnet to eliminate the magnetic flux leakage into the pick-up coil winding.