Mateusz Hohol
"Roger Penrose - pythagorean of complex numbers?"

Roger Penrose’s philosophy of mathematics reaches beyond what is normally understood as mathematical platonism. In this article, the pythagorean threat in Penrose’s philosophy of mathematics is reflected upon. Firstly, Roger Penrose's three worlds “global” ontology is presented. Secondly, basic differences between mathematical platonism and original platonic concept of mathematics are pointed out, followed by the demonstration of the pythagoreist clue in Penrose's philosophy. From the data presented, it can be concluded that the primary criterion of the distinction between mathematical platonism and mathematical pythagoreanism is, as it appears, the category of causality. In platonism, the mathematical entities are considered as epiphenomenal whereas in pythagoreism as real causes of the physical world.

Keywords: Roger Penrose, complex numbers, philosophy of mathematics, mathematical platonism, mathematical pythagoreanism