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Självständigt arbete i matematik

Matematiska institutionen

Stockholms universitet

Paul Meyer: Kissing could be difficult: An analysis of the so called Kissing Problem

Sammanfattning

How many spheres could simultaneously touch an inner sphere if all the spheres are of equal size? This is the so called "Kissing problem" and was raised for the first time in a discussion between Isaac Newton and a colleague of his in 1694. It would take mathematicians more than 250 years to prove that the solution is 12 spheres. The most famous proof was presented by John Leech in 1956. The main objective of this paper is to analyse and explain this elegant solution. Besides discussing the history of the problem, the paper will also explain the close relationship between packing theory and kissing theory for dimensions higher than three.