

1116-01-1381      **Veronica Gavagna\*** (vgavagna@unisa.it), Department of Mathematics, University of Salerno,  
Via Giovanni Paolo II, 132, I-84084 Fisciano, Italy. *Francesco Maurolico and the problem of filling  
space with regular polyhedra (1529).*

In 1528, the mathematician Francesco Maurolico (1494-1575) lectured on Euclid's *Elements* on behalf of the Senate of Messina. The unsatisfactory level of the available editions of the *Elements* convinced himself to provide a new edition, based on the known traditions but supplemented by some original contributions. Maurolico's reworking of Books XIII-XV, devoted to regular polyhedra, is particularly interesting for the increased number of new propositions. Maurolico's deep interest in these solids is also testified by *De impletione loci*, a work on the problem of filling space with regular polyhedra written in 1529. The goal of this writing is to confute the Averroes' remark (influenced by Aristotle) on the possibility of filling space with regular tetrahedra. The novelty is that Maurolico's approach to this problem was definitively mathematical and not philosophical: he measured the dihedral angles of the regular polyhedra and tested all the suitable combinations of the solids. Last but not least, in his studies on regular polyhedra Maurolico emphasized the discovery of a relationship among edges, faces and vertices that sounds as a kind of Euler's polyhedron formula. (Received September 19, 2015)