CAS in Mathematical Education for Engineers

M.M.Konstantinov, UACG, Sofia, Bulgaria, mmk_fte@uacg.bg
V.V.Pasheva, TU-Sofia, Bulgaria, vvp@tu-sofia.bg

The systems for doing mathematics as Mathematica, Maple and MATLAB are well known all over the world. One of the important messages of this talk is how to evaluate and combine the abilities of the systems mentioned above and the aims of the mathematical education for engineers. At the base of this education should stay the notion of mathematics as an abstraction with its concepts, their features, and with extremely many applications. That mathematics is a tool for modeling and understanding of a wide spectrum of situations, processes and events. That's why the lecturing should give the students the feel of the power of abstractions. Then the usage of computer systems would help them to understand this power through an appropriate number of modelling problems. For fresh students Maple is more appropriate, but for the next years students, MATLAB will help them to solve real life problems. One of the most important topics should be the effects of the computer arithmetic. This is because Maple thinks, but MATLAB computes.