

# Dynamic Demonstrations in the Math Classroom for Applied Sciences

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## Abstract

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Deductive or experimental reasoning, most benefit with less effort, deep theories needed but no time for deep study. These are some problems of teaching mathematics in applied sciences, and they hardly can be resolved.

Based on the long teaching science, engineering and math students, we give a summary of the experiences, and deal with professional, didactic as well as psychological aspects. We present our way of teaching, in which the computer-aided experiments and complex modeling approach are of central role. We show many applications, dynamic demonstrations in different topics, used regularly in our courses. Finally, we consider how deep mathematical fields, such as impulses, nonlinear and delay systems as well as their qualitative properties can be introduced at elementary level by simple examples with the help of Mathematica demonstrations.