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Modeling approach in teaching math students

On the previous CADGME conference, we spoke about the problems arising in teaching math courses for students in applied sciences. Now, it turns out, we need to speak about teaching applications to math students. Experimental arguments are accepted and even preferred in applied sciences, and such approach is also useful in theoretical mathematics, but it is not easy to convince the students about the use of experimental and modeling approach. Although the interdisciplinary and modeling approach became popular “keywords” in teaching mathematics students, the current practice is not as nice as we should think even in 2016. Deep theories are learned by the math students with hardly any applications. A new course “Mathematical model” given to freshman students try to help to resolve this problem.

In our talk, we will present the main idea, didactic goals, the curriculum and experiences of teaching models to our math students. We illustrate the talk with a lot of examples and dynamic demonstrations prepared in Wolfram Mathematica.