

Teaching differential equation models with Mathematica in applied fields

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Scientists, students in applied fields work with very complicated mathematical models without knowing the deep theory behind. For them, the experimental study is more convincing than the rigorous theoretical treatment. Hence, computer-aided methods are of great importance in teaching Mathematics to these fields. The above statements are especially true for complicated dynamic models, which cannot be solved explicitly, and their behavior can be investigated by very deep mathematical theories, or, in some cases the experimental study is the only way to learn anything on them.

In the talk, we deal with the problem from two aspects. First we consider some applications (including the didactic questions) of dynamic models from our math courses in life sciences as well as courses given to math students. From the other side, we consider examples of developing modeling applications.