

Visualizing ODEs with KeTCindy

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In ordinary differential equations courses, not only techniques of solving equations but also theoretical and qualitative aspects should be treated. To teach those aspects efficiently, visual teaching materials are always desirable. For example, visualizing a differential equation as a slope field will help learners to understand the existence of local solutions or the difference of local and global solutions. Also, bifurcation phenomena will be understood clearly if they are expressed in animation forms.

KeTCindy is a powerful tool for generating such mathematical figures. It uses Cinderella as a graphical user interface and creates TeX codes for the graphics. The outputs can be implemented not only in printed matters, but also in slides for screen presentation. Furthermore, KeTCindyJS, which is an extended version of CindyJS, can make those figures into interactive content which can be viewed and manipulated on web browsers.

In this talk, we will show visual teaching materials which are made by using KeTCindy and used in a course of ordinary differential equations.

Keywords

ordinary differential equations, KeTCindy, CindyJS