

## 26. Masataka Kaneko and Setsuo Takato

### Collaborative use of KeTCindy with CAS

Manipulating mathematical objects on a PC screen interactively and paper and pencil-based activities to process mathematical reasoning are both important aspects of mathematics education. In order to establish an effective linkage between these two sorts of activities, we have developed a plug-in named KeTCindy into the excellent dynamic geometry software Cinderella. KeTCindy converts the procedure of drawing graphical objects on the Cinderella screen into TeX readable code to generate the corresponding mathematical artwork in its final PDF output. Thus, KeTCindy makes Cinderella an efficient graphical user interface for generating high-quality mathematical artwork on TeX documents. Also KeTCindy extremely enhances the editing and graphics environment of TeX.

To improve graphics capabilities of KeTCindy system, using it collaboratively with the symbolic computation capabilities of various computer algebra systems (like Maxima, Scilab, Risa/Asir) or well-structured simulation capabilities of statistical software (like R) is desirable. Therefore, we have implemented the function of invoking those computing software programs and importing the data calculated or simulated by using them into KeTCindy. Combining these imported data with the interactive graphics capability of Cinderella should result in the possibility of presenting extremely wide range of mathematical objects.

In this talk, we will show some basic functionalities of KeTCindy system together with some sample class materials generated with it. While showing them, the merits of the above mentioned collaborative use will be emphasized.