Working Group

USING SETS OF MATHEMATICAL TOOLS

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Mathematical softwares are diverse and rich. Each software can perform some tasks very well and others only with big efforts. However in preparing study courses where different software can be used, quite often a question whether should students be exposed to one or many tools emerges.

Should we choose one powerful tool and equip the students with detailed knowledge of this particular tool or should we use many different tools, or told a bit differently "One tool covering all aspects of teaching and learning mathematics, or many "smaller" tools"

Some teachers claim it is best to stay in the same environment all the time, and indeed this facilitates the basic technical introductions. However, is not part of the teaching duty to equip students with the knowledge of how to pick the right tools for a particular task?

When several tools approach is used, some technical problems, hindering the pedagogical approach, occur. The copy-and-paste workflow is the most widely used function to exchange content between softwares. Users can benefit of particular computation facilities of one software and of representation facilities of another. Such exchanges are often bumpy: special copy functions, plain-text adjustments, or careful verifications must often be used.

The session of this working group will explain the technical processes and demonstrate cases where the copy-and-paste exchanges work well and where they fail to do so.
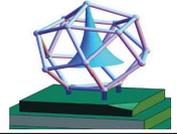
A discussion will then follow so that scenarios of applications of copy-and-paste are devised with a particular emphasis on the educational value of using (if possible) this function.

Indeed, such exchanges may bring with them translations that make the work merely possible (e.g. because the syntax of a new environment is not known), too easy (e.g. because it allows the pupils to let the computers do a homework instead of them), or too hard (e.g. because the students would need to know the different names of the functions in the new world). It may also be the base of learning and teaching scenarios which are of classical importance such as the realisation of reports with a detailed mathematical reasoning or the concretisation of a numerical method within a spreadsheet.

The working group will be the opportunity to discover the tools to inspect the clipboard and understand why it is working or not. It will also be the opportunity to discuss alternative combinations or alternative methods of exchanges.