

Thematic Afternoon at ICME-13
Strand on “European Didactic Traditions”

There is a variety of traditions in mathematics education across Europe with their own history and their own key themes, rooted in their respective cultures. However, there are some *common features* in these traditions, especially in those traditions which call themselves “Didaktik” (Didactique, Didattica, Didactiek, Didactica, ...), in particular the following four:

- A strong connection with mathematics and mathematicians
- A key role of theory
- A key role of design activities for learning and teaching environments
- A firm basis on empirical research

Another common feature of many of these traditions is a decisive influence on other, especially non-European countries, and interactions with these countries.

It is not possible to present this variety of didactic traditions in one afternoon. Rather, it is necessary to concentrate on a few examples. For this purpose, four countries were selected by the IPC as *cases* to consider: France, Italy, the Netherlands, and Germany. It is clear that some important traditions are missing, for example, from Northern or Eastern Europe. Some of these missing traditions will nevertheless be present in the programme, as part of the presentation of the four cases.

The programme will start with a *plenary activity* in the first hour (15:00-16:00, chair: Werner Blum). The four common features above will be presented, so that their importance in the four selected cases, and similarities as well as differences between the four cases will be illustrated.

After a coffee-break there will be *four parallel sessions* for the remaining two hours (16:30-18:30). In these sessions, the four country cases will be presented (France, Italy, Netherlands, Germany) showing in detail how the four common features play out in each respective European tradition, including an historical perspective. Among other things, the following aspects will be presented in the first hour of the sessions:

France (chair: Michèle Artigue): Emergence, development and main characteristics of the French didactic tradition, with voices of major contributors to this tradition; illustration by two case studies reviewing research carried out on geometrical transformations and algebra.

Italy (chair: Maria Alessandra Mariotti): Collaboration between mathematicians and school teachers in response to innovation issues, leading to stable research teams; critical comparison with didactical traditions from different cultures.

Netherlands (chair: Marja vandenHeuvel-Panhuizen): Snapshots from mathematics and mathematics education in the Netherlands; working on a design activity and implementing it in a classroom; voices from experts in didactics; the main principles of RME.

Germany (chair: Rudolf Sträßer): Look into the roles of mathematics and mathematicians, of design of learning and teaching environments and of empirical research from

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the perspective of German speaking countries by means of comments from protagonists of these features.

In all four cases, there will not only be views from inside these countries but also from outside insofar critical friends from other European countries (including Northern and Eastern Europe) will present their views on the respective didactic traditions. A substantial part of the second hour of the four sessions will be devoted to examples of interactions and collaborations between these traditions and other countries in Europe, America, Asia and Africa. In all sessions there will also be some time for interactions with the audience.