

***Projeto Klein em Língua Portuguesa***  
**A progress report on *Klein Project for 21<sup>st</sup> century* in Brazil, and its links to other Portuguese speaking countries.**

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In October 2009, the first Klein Workshop took place at Funchal-Madeira, Portugal. Mario Jorge Dias Carneiro (Belo Horizonte) and Yuriko Yamamoto Baldin (São Carlos) attended the Workshop as speakers and in representation of Brazil. Discussions with other participants, especially Jaime Carvalho e Silva (Coimbra) and José Francisco Rodrigues (Lisbon) gave strength to the idea of developing a “Klein Project in Portuguese,” as a joint effort between the academic communities of Brazil and Portugal, and extending to all the other Portuguese speaking countries.

This idea was consolidated upon their return to Brazil. Still in October 2009, Baldin had the opportunity to communicate the main ideas of the Madeira Workshop at the International Symposium in Mathematics Education, organized by SBEM-Brazilian Society of Mathematics Education, in Brasilia, Brazil. This also pointed towards another much sought for ingredient for the Klein Project in Brazil: to enhance the collaboration between the communities of mathematicians and mathematical educators.

At the initiative of the president of the Brazilian Mathematical Society, Hilário Alencar, a Steering Committee for the Klein Project in Brazil was formed, with representatives from all four scientific societies in the area of Mathematics, as well as OBMEP, Brazilian Mathematical Olympiads for Public Schools:

Yuriko Yamamoto Baldin: co-chair

Mario Jorge Dias Carneiro: co-chair

Suely Druck: OBMEP- Mathematical Olympiads for Public Schools

Paulo Figueiredo Lima: SBEM-Brazilian Society for Mathematics Education

Sergio Nobre: SBHMat-Brazilian Society for History of Mathematics

José A. Salvador: SBMAC-Braz. Soc. for Applied and Computational Mathematics

Marcelo Viana: SBM-Brazilian Mathematical Society.

At the same time, a funding request for *Projeto Klein em Língua Portuguesa* was presented to CAPES, the main funding agency within Ministry of Education of Brazil. The proposal was evaluated most favorably and was approved in its entirety. As a consequence, CAPES has granted *Projeto Klein em Língua Portuguesa* a total BRL 1million (a little over EUR 400,000, at current rates), in addition to a substantial number of scholarships for teachers and graduate students to conduct classroom pilot experiments. This virtually ensures the realization of all the programmed activities.

The Steering Committee met for the first time on January 18, 2010 to start designing the project and to schedule the first activities. It was decided to invite a broad group of specialists, with different areas of expertise, to assist the Committee in defining the focusing themes for the various activities, and help select its participants, as well as to

review and criticize the products. Some of these have already been nominated by the partner institutions (OBMEP, SBEM, SBMHHMAT, SBMAC, and SBM) and are currently collaborating with the Steering Committee.

Moreover, the first Klein Workshop in Portuguese has been scheduled to be held in Belo Horizonte, Minas Gerais, from 04 to 06, July, 2010. Michèle Artigue from the Design Team for Klein Project for 21<sup>st</sup> century has accepted the invitation to deliver a plenary speech in the Workshop, as well as Jaime Carvalho e Silva (Secretary General of ICMI) and José Francisco Rodrigues have confirmed their participation as keynote speakers.

*Projeto Klein em Língua Portuguesa* will last for 4 years and will be organized around the following main cycles of activities:

- Workshops, with a small number of invited participants and a focus on discussions leading to the production of mathematical material, on specific subjects ranging from classical areas as Algebra, Analysis, Geometry/Topology to modern applications related to such topics as Computer Science, Discrete Mathematics, etc.
- A series of experimental workshops with selected students from public schools, including winners of the mathematical olympiads, in which the texts and materials will be tested and improved.
- Pilot-experiences of the use in actual classrooms of the material produced by the project. It is especially interesting to test these materials in the Distance Education environment that has been recently much expanded with the creation of UAB-Open University of Brazil;
- Participation of team members of the project in international events related to the Klein Project, to present the analysis of the results and to share experiences. This will enhance the effective participation of teachers in the educational scenario provided by the original project.

Sharing ideas and experiences with Portuguese researchers and teachers will be a main ingredient.

The objectives are manifold. To begin with, *Projeto Klein em Língua Portuguesa* aims to coordinate, energize and filter the most significant contributions from the Brazilian community to the Klein Project.

In addition, and most important in the current scenario of mathematical education in our country, it aims to catalyze the production of material, in various forms and media, for use in the classroom, at all levels. This is seen as a significant contribution to the improvement of mathematical education.

Such material will surely be of use also in other parts of the world, especially, in the countries that share the same language. Indeed, fostering the collaboration between mathematicians and mathematical educators in Brazil, Portugal, and the other Portuguese speaking countries, is another major goal.

Last, but not least, this initiative provides a privileged occasion for bringing together the efforts of the research and education communities, towards a common goal. The format of the project and the composition of the Steering Committee itself is a token of the ongoing efforts to bring these communities increasingly closer.