IMAGINARY
International Conference on Interactive Mathematics and Math Communication
24, 25 and 26 April 2012
Museu d'Història de Barcelona (MUHBA) de la Plaça del Rei, Sala Martí l'Humà

Abstracts

24/4/2012

María Teresa Lozano Imízcoz
Imaginary/Zaragoza. Plaster models of surfaces from 19th century: Origin and influence.

The Universidad de Zaragoza conserves a collection of mathematical models dating back to the 19th century which were donated to the Facultad de Ciencias by Dn. Zoel García Galdeano. It was exhibited in September 2011 along with RSME-Imaginary.

We will recall the origin of these models whose originals were constructed in German universities under the direction of such important mathematicians as Alexander Brill, Felix Klein and Walther von Dyck. We will analyze also the great influence of some of these pieces in out-standing sculptors throughout the 20th century.

Raquel Mallavibarrena
Imaginary in the context of Education: reflections from the Madrid experience

I will focus on the impressions, motivation and reactions in general that students of Mathematics have when they visit Imaginary exhibition. This will be connected with some main topics in debate about Mathematics education nowadays.

Mireia López

A presentation of the FEEMCAT and ABEAM

Antonio Campillo
A presentation of the RSME

Raúl Ibáñez, Andreas Loos, Thomas Vogt, Rachel Thomas
Workshop on comunication/popularization

25/4/2012

Mercedes Siles y Pedro Reyes
Dialogs between parallel universes

We want to explain what was the idea that led us to prepare, together with the team of chefs led by Jose Carlos García, two photographic exhibits: *The taste of Mathematics*, a dialogue between mathematics and kitchen with art in the backdrop, and *Dialogues between parallel universes*, a look at the creative side of both Mathematics and the Kitchen which highlights engaging analogies between them.

We will explore sensitive and artistic aspects of Mathematics, of the Kitchen, and how these exhibitions can help to bring mathematics closer to society.

Sonia Garcinuño
Is it possible to disseminate abstract scientific disciplines through a fun and engaging exhibit?

The purpose of this talk is to show how to popularize science through the various resources used in the interactive exhibits of Fundación "la Caixa". It will offer an overview of the production process of a science exhibit, from inception to the opening day, with emphasis on the role of the different teams that collaborate in each phase.

José Francisco Rodrigues
Communication of Mathematics with Digital Artifacts

Joan Solà-Morales
A presentation of the SCM

Carlota Simões, Paulo Gama Mota and Pedro Casaleiro (Science Musem of the University of Coimbra)
Imaginary - Mathematics and Nature: the Coimbra exhibition

According to the Oberwolfach Institute for Research in Mathematics , *the idea behind the IMAGINARY exhibition is to use the visual and aesthetic component of mathematics as an eye-catcher in order to explain the visitors the mathematical backgrounds in an interactive manner*. On the other hand, the University of Coimbra holds a unique scientific museum collection of national and international relevance. The objects from the collections of physics, astronomy, chemistry, natural history, medical sciences, testify the Enlightenment way of knowing, describing and understanding the world and the nature.

The exhibition IMAGINARY – MATHEMATICS AND NATURE aims to combine the concept IMAGINARY with the rich and vast scientific collection of the University of Coimbra. Interactive modules and images of algebraic surfaces from the IMAGINARY project are faced with objects of natural history, such as shells, minerals and crystal models and even hundred years' old mathematical models in various materials such as plaster, metal, wood or paper.

The exhibition IMAGINARY – MATHEMATICS AND NATURE opened last March at the Science Museum of Coimbra. A similar project, combining IMAGINARY with scientific historical collections, is about to open to the public: next May, the FORMAS E FORMULAS exhibition, at the Natural History and Science Museum of the University of Lisbon.

Andreas Matt, Anna Hartkopf, Christoph Knoth, Konrad Renner
Workshop on Past, Present and Future of IMAGINARY

26/4/2012

Jordi Comellas
A Spanish program for boosting high-achievers' mathematical competencies

J. Monterde (Universitat de València)
Computer-aided design of curves and surfaces

Almost all of the surfaces that the visitant can enjoy along the Imaginary exhibition are examples of algebraic surfaces, sets of points whose coordinates satisfy a polynomial equation. To guess what could be the shape of an algebraic surface from its defining equation is a hard task. Symmetries can help, because if they are present in the equation they will be also present in the surface, but no more tools are available. Try to realize as an algebraic surface a shape existing only in mind could be a problem.

In this short talk we shall review how to build shapes with the help of computers when parametric surfaces are used instead. One of the most popular methods, namely that of Bézier curves and surfaces, was originated in two French car factories in the sixties but nowadays it has become widespread to many other realms like typography or architecture.

María García Morera (Universitat Politècnica de València)
Slicing Imaginary

In 1903 the German Company Martin Schillling published a catalogue that included cardboard models designed by Felix Klein and Alexander von Brill. Recently, John Sharp published a book in which he gave a method to build surfaces by intersecting them with 2 families of perpendicular planes. In this talk, I'll present some cardboard models of surfaces that we can see in the exposition Imaginary and which are based on the catalogue and John Sharp's models.

Christian Stussak, Steffen Weissmann, David Obrador
Workshop on Interactive Mathematical Software