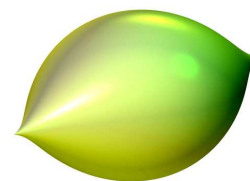


# Summary Report

## IMAGINARY: through the eyes of mathematics

Isaac Newton Institute for Mathematical Sciences  
8–17 March 2010

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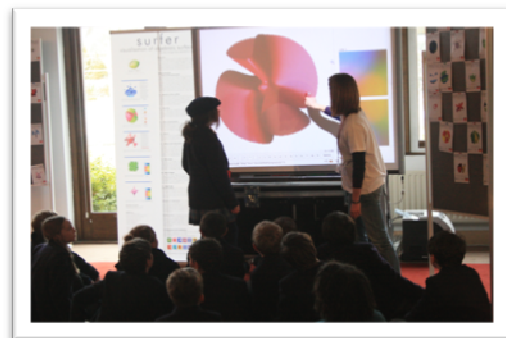


### Background and exhibition arrangements

IMAGINARY is a travelling exhibition created by the Mathematisches Forschungsinstitut Oberwolfach and the Institute hosted the first visit to the UK. Our goals were to excite and inspire public engagement with mathematics through the beautiful and elegant images that are produced using algebraic geometry and to encourage the creative exploitation of mathematics using special software. School groups were particularly encouraged to attend a free tour by trained demonstrators, and families and groups were invited to attend when it was convenient for them and ad hoc tours were offered.

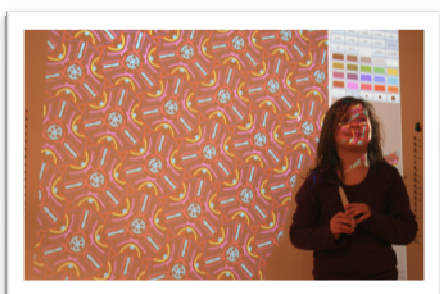
The exhibition was located in the main Institute seminar room consisting of a picture cube, sculpture cabinet and three interactive elements in different corners of the room. There were two interactive whiteboard screens and one screen with a 6 way mouse/joystick. The software is all available for free download from [www.imaginary-exhibition.com](http://www.imaginary-exhibition.com)

- SURFER: A visualisation programme to create algebraic surfaces from equations
- Cinderella: Virtual physics simulations
- Morenaments: Symmetry and pattern making
- 3D\_XplorMath: 3D visualisation software for animating mathematical objects
- Jreality: Virtual worlds containing mathematical objects to interact with



A separate room was set up as a cinema to show a 40 minute film entitled *Mesh – A Journey through Discrete Geometry* (Springer).

A team of 5 graduate demonstrators were recruited from the Faculty of Mathematics at Cambridge. They were trained to give exhibition overviews and specific demonstrations on the software. A special focus was made on ensuring a positive experience for every visitor. 2 demonstrators were available at all times during the exhibition opening hours.



### Visits

There were 833 recorded visits to the exhibition. This figure is obtained from the pre-booked groups and the visitor's book on the reception desk. The final number of visits is likely to be higher, as we are aware that during busy periods not everyone signed-in. We were very pleased with the visitor numbers and feel that the quality of experience received by each visitor was



excellent. There were very few times when the exhibition room was empty – but when the exhibition was busy there was usually enough space for everyone to see the exhibits and to use the interactive software if they wished.



Children of all ages were able to engage with the exhibition (our youngest visitor was 5 months old). Younger children particularly enjoyed using the symmetry software and made a variety of interesting designs. Visitors with some knowledge of mathematics used the SURFER software to produce inventive geometric shapes from an algebraic formula. A picture competition was held for the best geometric image and 68 entries were received and prizes will be awarded shortly for the best images.



### Feedback

The attendee questionnaires that were received (195 in total) show an overwhelmingly positive reception to the exhibition and we feel that we achieved our objectives of inspiring and exciting visitors. Verbal feedback received during the event was all positive and some visitors came to the exhibition several times, bringing along different friends and family each time.

A total of 13 pre-booked tours took place involving groups as young as year 5/6 and some adult groups from Blue Badge tours in Cambridge. Sancton Wood School in Cambridge turned the exhibition into a whole school project with follow up activities in class based on the golden ratio.

### Summary



The exhibition has been a resounding success and the Institute feels privileged to have hosted the exhibition. We hope that we have increased awareness of the beauty of mathematics, particularly with children, and hopefully will inspire a new generation of mathematical researchers. We are very grateful to Adrian Weller, RCUK and the Science Museum for their generous support.