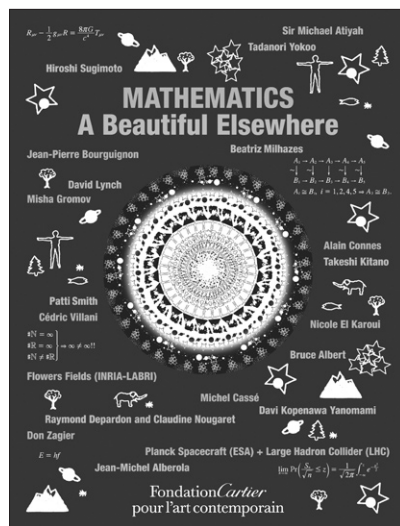


MATHEMATICS: A BEAUTIFUL ELSEWHERE

Exhibition, 21 October 2011 – 18 March 2012
Fondation Cartier pour l'art contemporain
Paris

How can one communicate the 'beautiful elsewhere' of abstract mathematics? If one is willing to accept Cédric Villani's explanation, in the series of interviews created by filmmakers Raymond Depardon and Claudine Nougaret, the answer to this recurrent question for every working mathematician is right in front of us: there is nothing as effective as a blackboard! However, when trying to reach a general audience a more visual beauty often comes to the rescue. With this idea in mind, the Fondation Cartier pour l'Art Contemporain conceived the nearly impossible dream of establishing a fertile dialogue between many mathematicians and artists with whom it has worked closely in the past. The project came true thanks to the enthusiastic dedication of curators Jean-Pierre Bourguignon, Michel Cassé and Hervé



Chandès, who relied on the patronage of the Institut des Hautes Études Scientifiques and UNESCO. The exhibition *Mathematics: a Beautiful Elsewhere* is on in Paris until 18 March 2012.

Japanese mathematicians of the Edo period already understood the preeminent role that art can play in the popularization of science, as they initiated the tradition of Sangaku: wooden tablets representing puzzles in Euclidian geometry that were placed as offerings at the entrances to temples. Using the latest technology in computer animation, BUF Compagnie has given life to them in a sequence of videos, which also show how Chinese people were

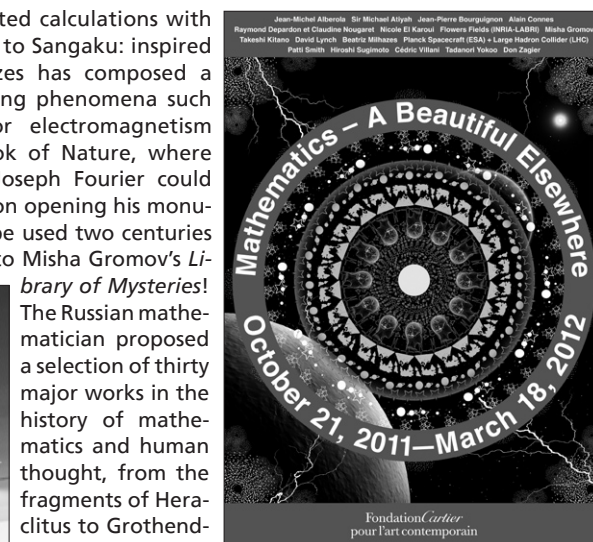


The Room of the Four Mysteries

able to perform quite complicated calculations with sticks. It is not the only homage to Sangaku: inspired by them, artist Beatriz Milhazes has composed a collage in which equations ruling phenomena such as irisation, morphogenesis or electromagnetism invite visitors to open the Book of Nature, where "numbers govern even fire". Joseph Fourier could hardly imagine that the quotation opening his monumental treatise on heat would be used two centuries later to design a fireplace next to Misha Gromov's *Library of Mysteries!*



Hiroshi Sugimoto
Conceptual Form 011, 2008



The Russian mathematician proposed a selection of thirty major works in the history of mathematics and human thought, from the fragments of Heraclitus to Grothendieck's *Récoltes et Semailles*. But how to actually exhibit them? To that end, David Lynch has created a structure in the shape of a zero, in which an audiovisual installation presents extracts from the books, in a journey from the smallest particles to the largest galaxies.

Everybody agrees that infinity is one of the hardest concepts to comprehend. What about trying to learn it by looking at Hiroshi Sugimoto's three metre high *Surface of revolution with constant negative curvature*, whose tip is only two millimetres in diameter? Henri Poincaré would have been fascinated by this modern representation of the pseudosphere because, as painter Jean-Michel Alberola shows, hyperbolic geometry had a central place in his mathematical world. What about the mathematical worlds of today's researchers? Eight mathematicians coming from different fields have given eight beautifully framed answers. While Michael Atiyah thinks of mathematics as a "reflection of what people dream", for Don Zagier they form an open world in which the only way to get surprising results is to let oneself go by ideas. That is probably the best metaphor of the whole exhibition. As one visitor put it, "if I had known mathematics was like that..."

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