

THE MANDELBROT SET AND THE RIEMANN MAPPING THEOREM

MIKHAIL LYUBICH

Wednesday December 7th, 12:50pm - P-131 - Math Tower

The Mandelbrot set M encodes in a single picture the grand dynamical complexity of the quadratic family. It is an intricate fractal set whose beauty has fascinated people for three decades. A good way to look at it is to imagine that it is a conductor, to put an electric charge at infinity and to look at the resulting field (which is directly related to the Riemann Mapping onto the complement of M). Amazingly, the field (and thus the Riemann Mapping) can be described by explicit formulas. Then one can put test electrons in the field, let them go towards M , and see where they land: the landing pattern produces a precise topological model for M . There is only one catch in this story...

