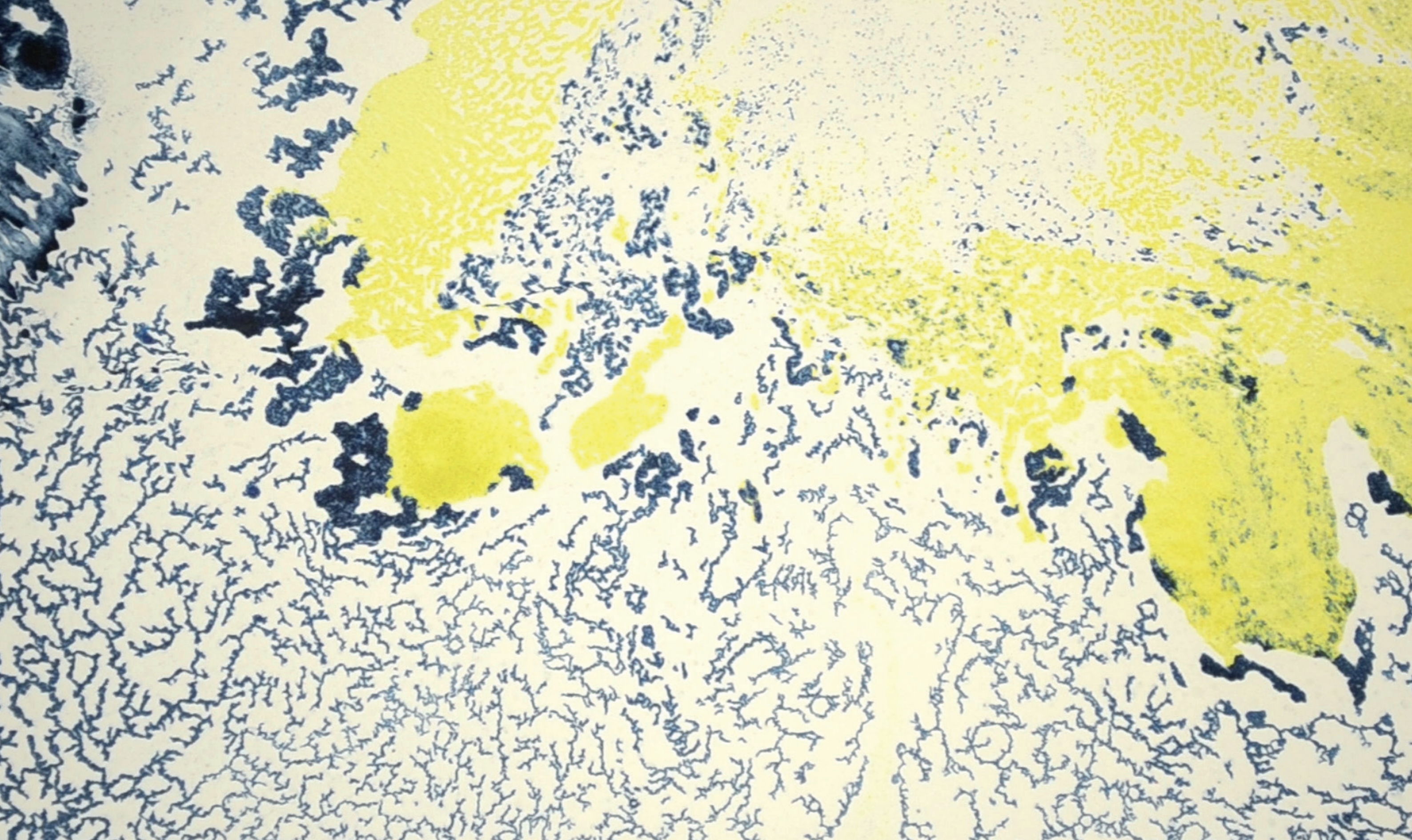


TUTTI
QUANTA

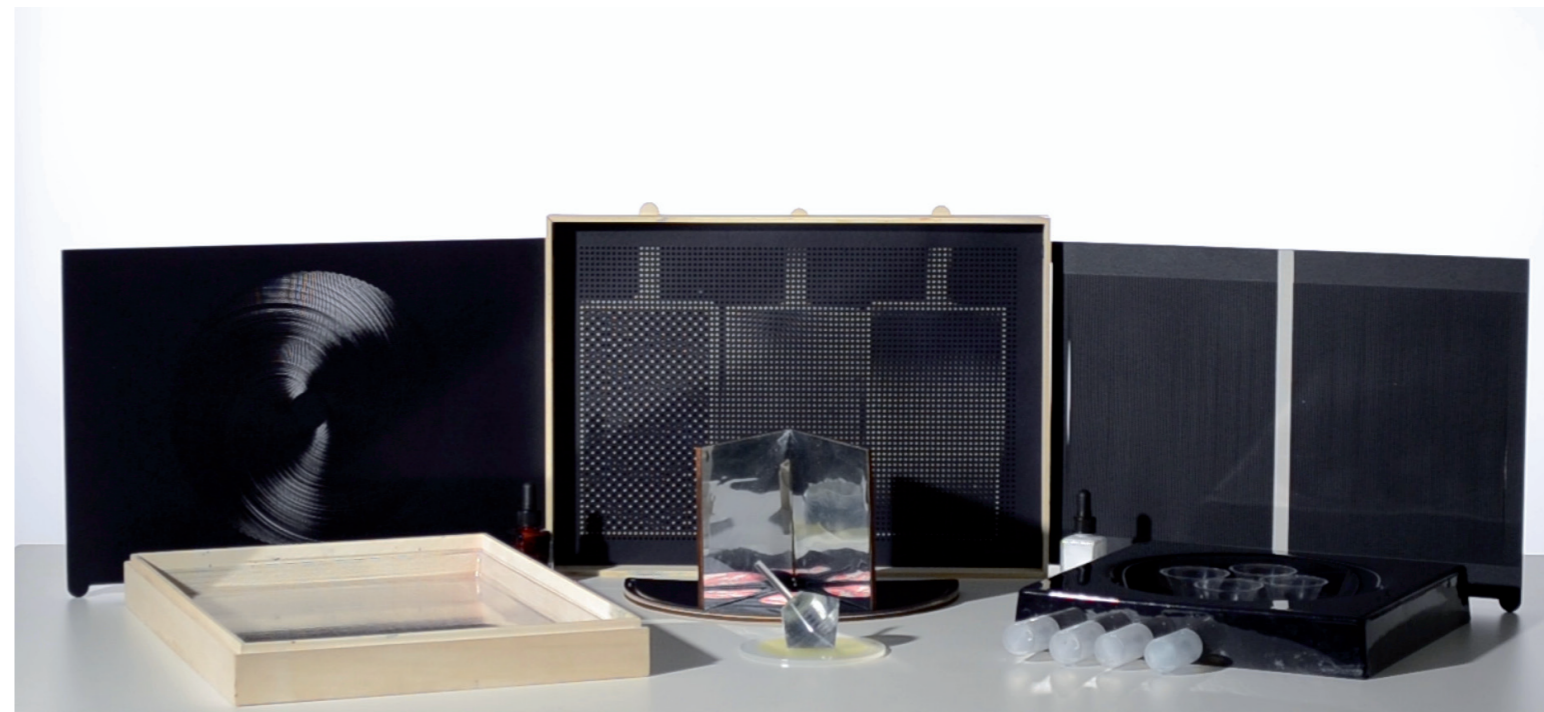


QUANTUM EFFECT

Julien Bobroff

PLASTIC EFFECT

Marianne Cardon



QUANTUM WAVE FUNCTION

A quantum object may be defined as a wave of matter which is located in different places at the same time and whose movements have no specific pattern.



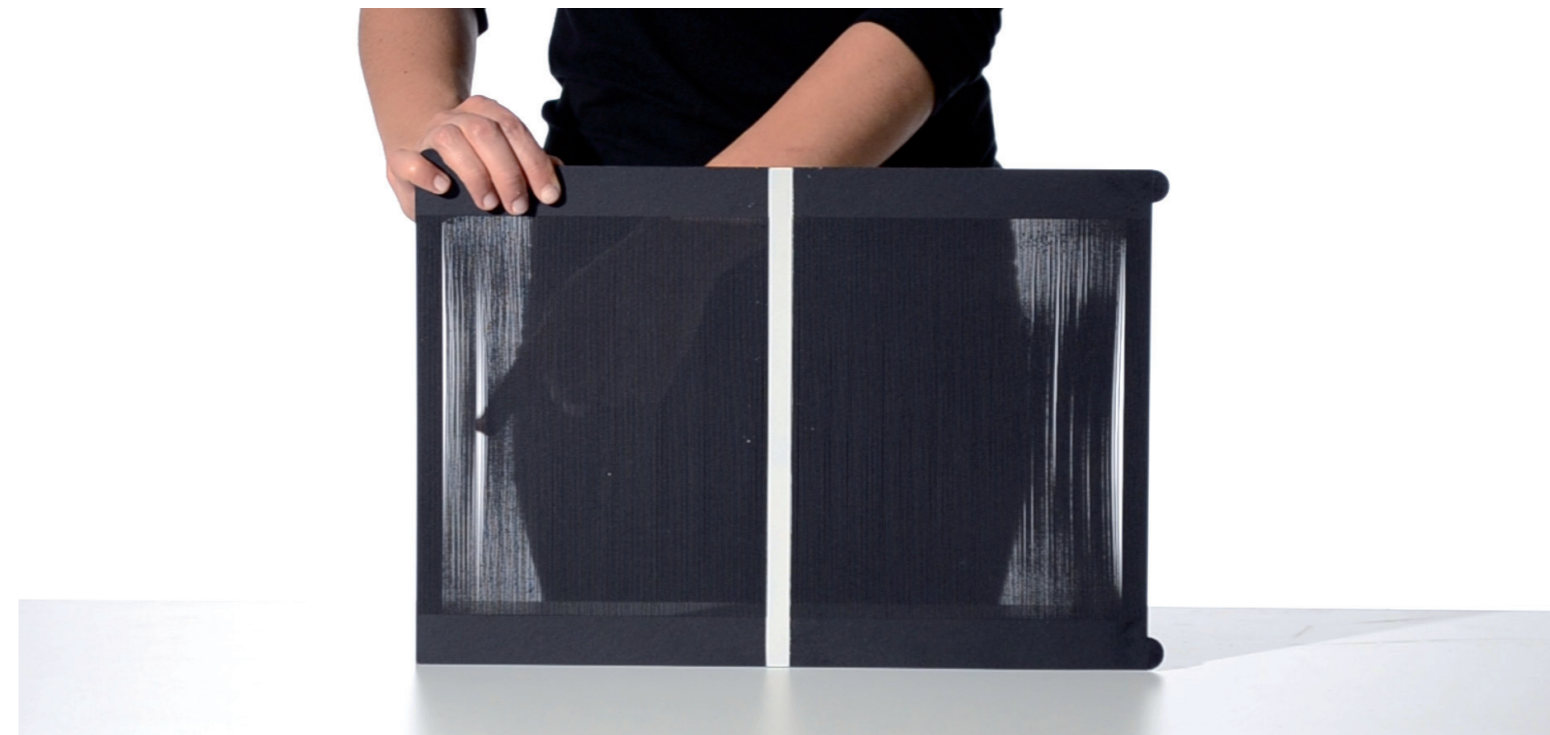
WAVE OF MATTER /1

A flexible and rigid object at the same time. When manipulated, a wave takes shape. A wave takes shape. It spreads out in circle and reverberate like an echo.



QUANTUM TUNNELING

When the electron is thrown on a wall, it usually bounces back. However, when the wall is particularly thin the electron may sometimes go through it.



WAVE OF MATTER $/2$

This wave of matter bounces back against the wall, and suddenly goes through it.



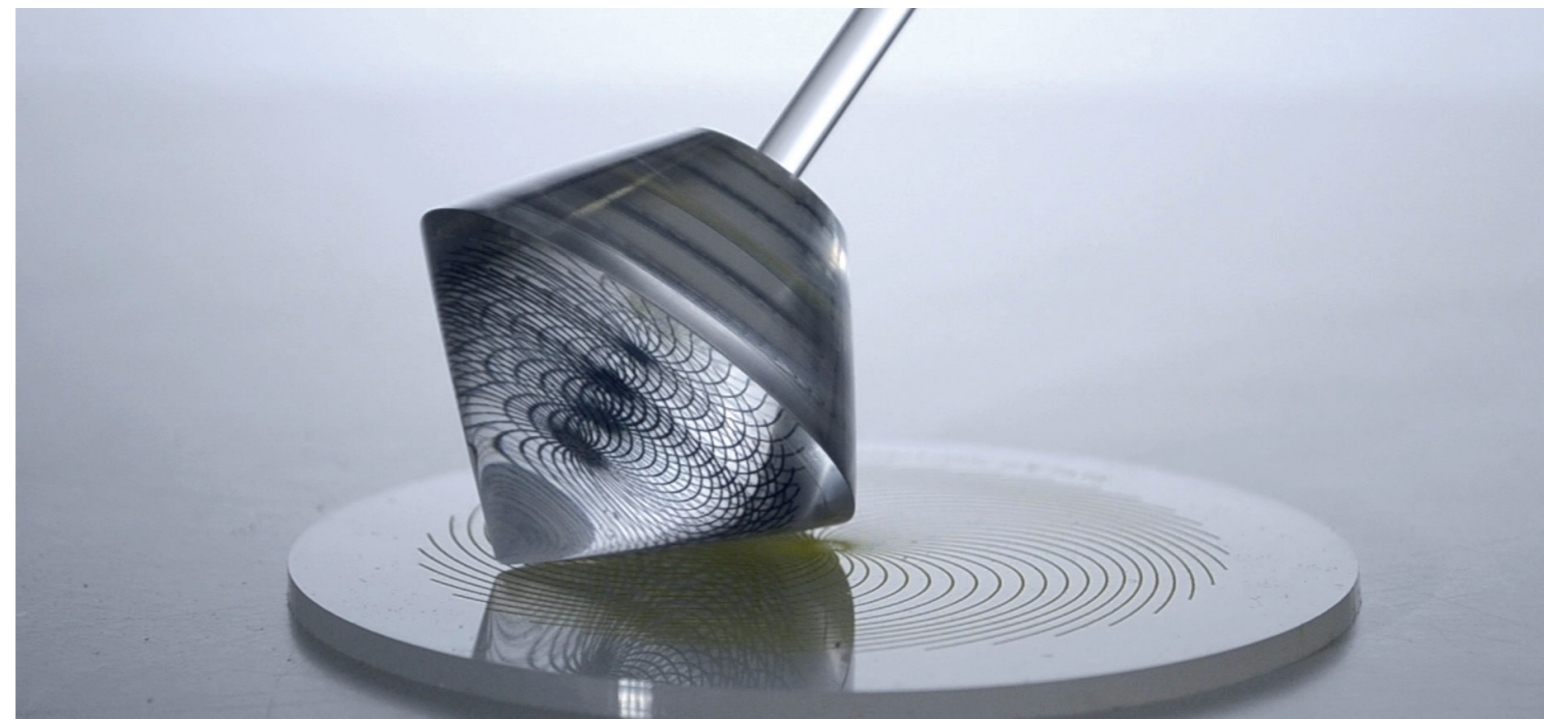
QUANTUM SUPERPOSITION OF STATES

A quantum object can be in two states at a time.



SPINNING TOP

An transparent object which shows one pattern on one side. Both states are mixed thanks to the spinning top movement.



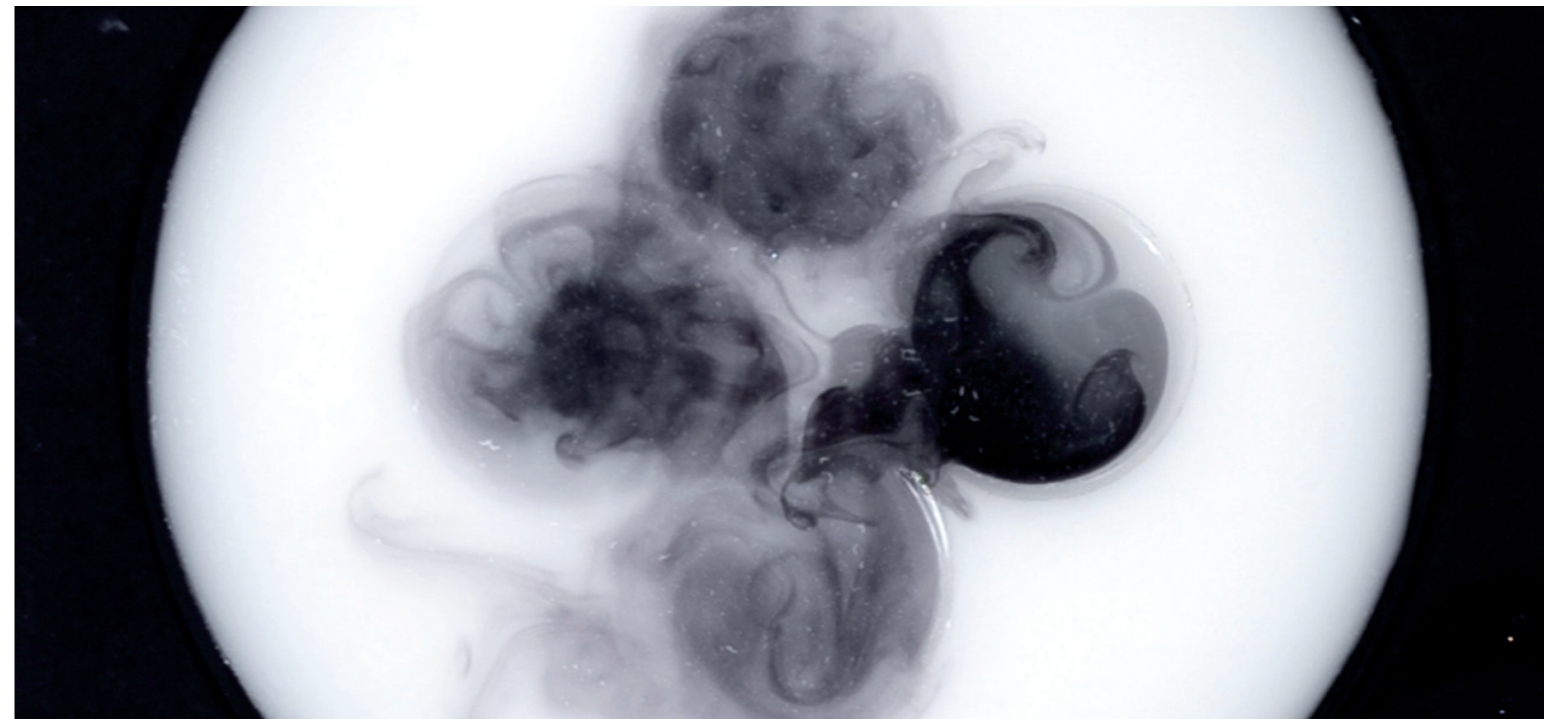
ORBITALS

Within an atom electrons are trapped around the nucleus where they take on specific shapes that look like clouds. They are referred to as orbitals.



INK CLOUD

Patterns made of moving ink clouds in water. Shapes are recognizable, yet their contour remains blurred.



QUANTUM LEAP

When an electron or an atom is excited by light, it may suddenly jump from an orbitale to another, implying a sudden change of shape.



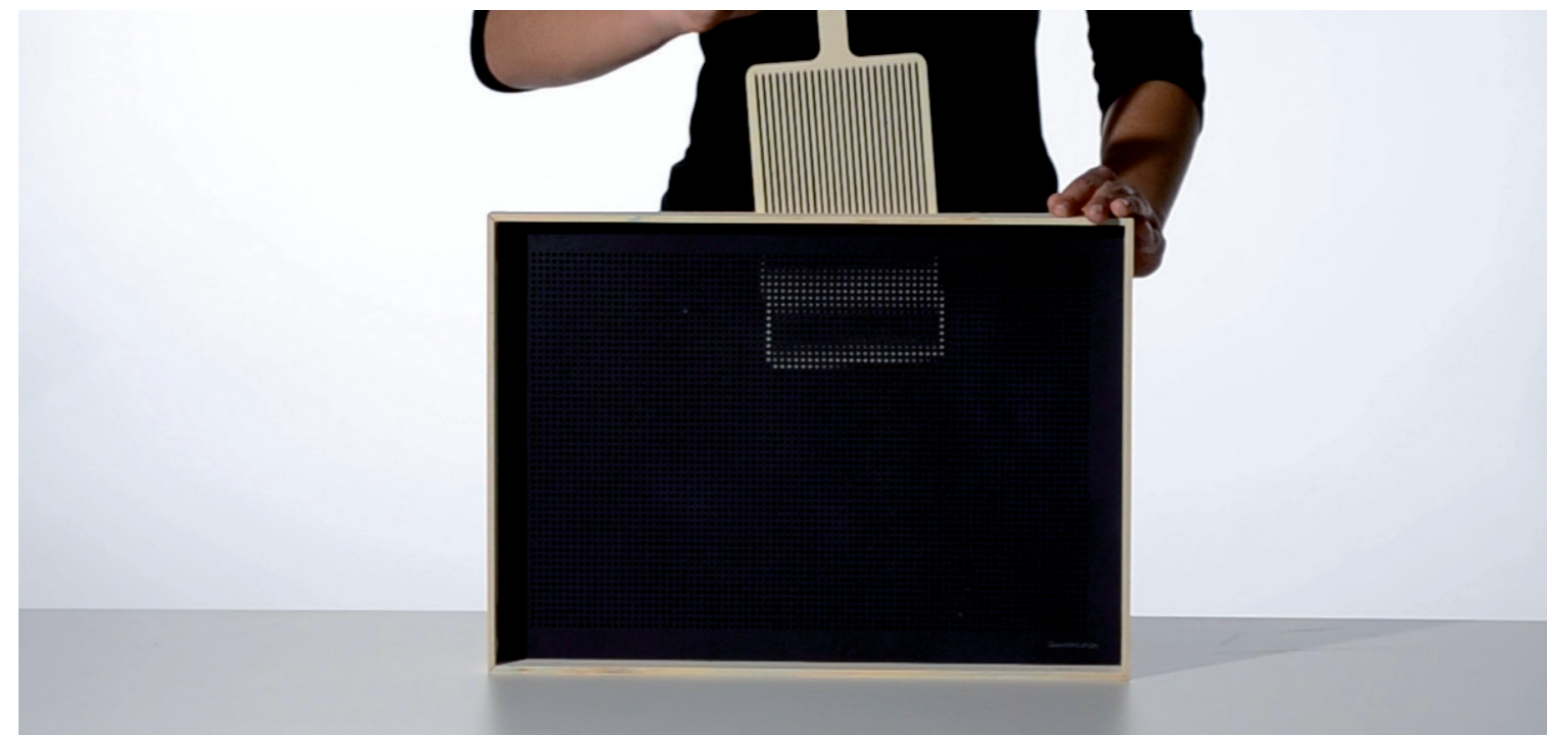
REFLECTION

A pattern reflects itself in two mirrors. 180° : 2 elements, 90° : 4 elements, 45° : six elements.



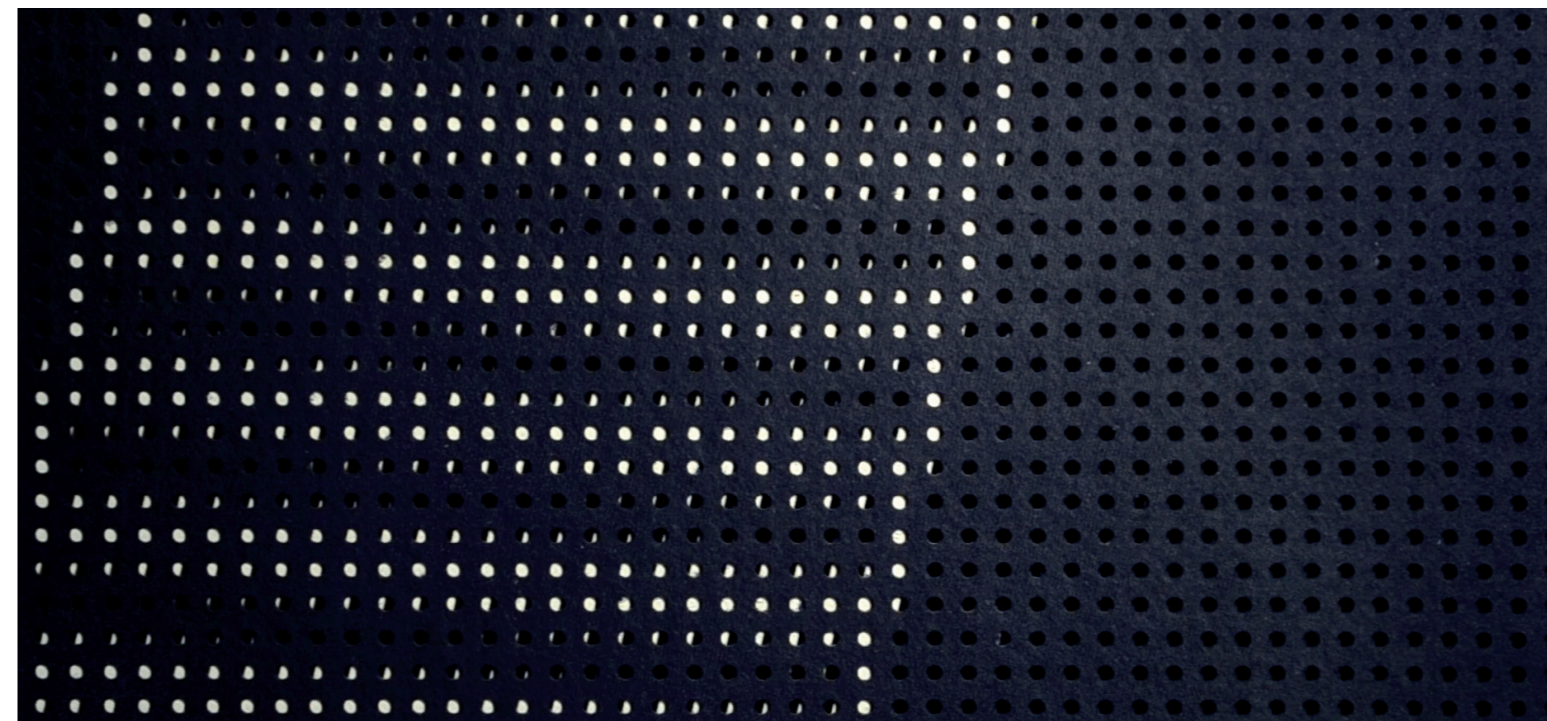
QUANTIZATION

Quantum particles can only have specific and discontinuous energy levels. They jump discontinuously from an energy level to another.



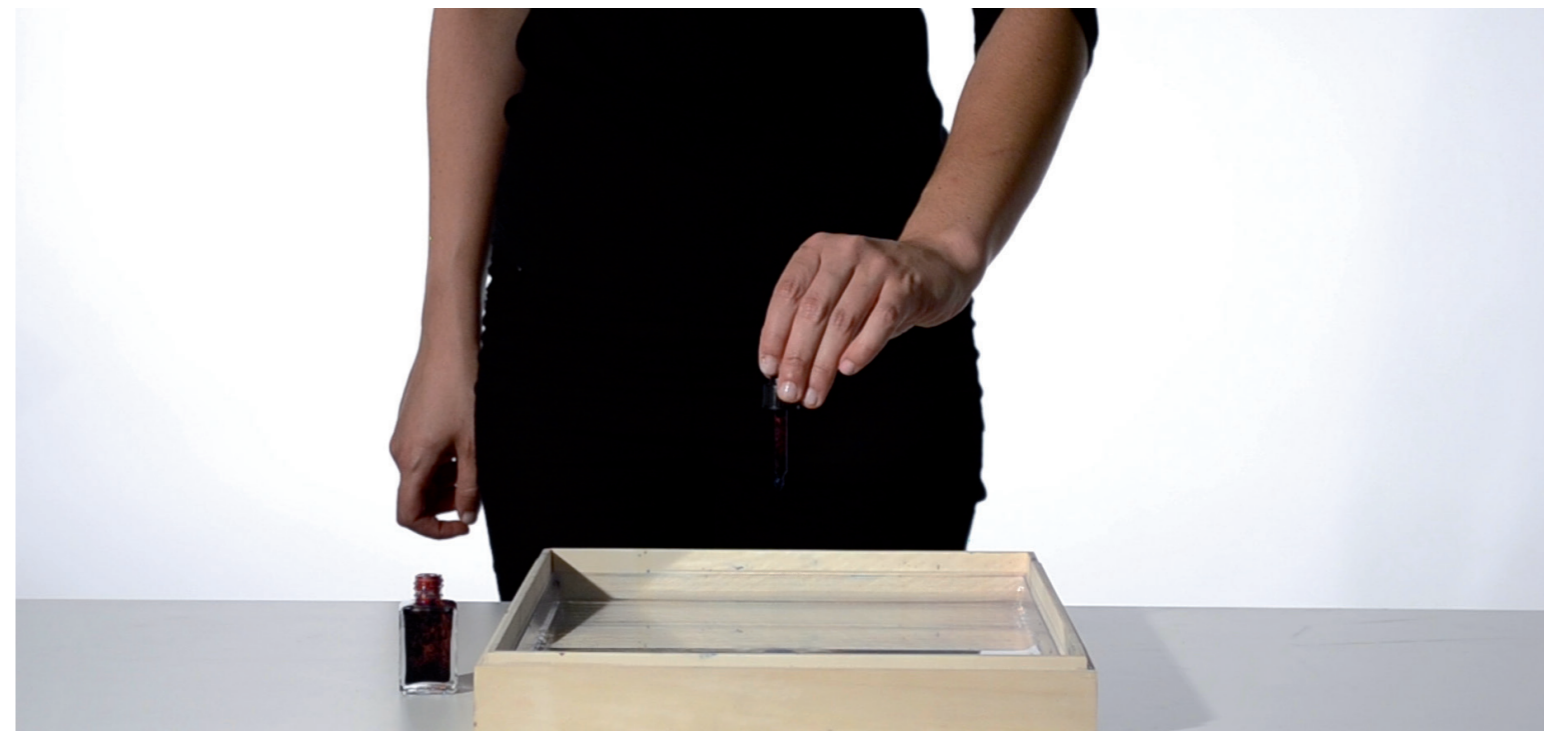
MOIRÉ EFFECTS

A raster on top of an other. Moving patterns creates moiré and vibrating images. The pattern jumps from one image to the other in a discontinuous movement.



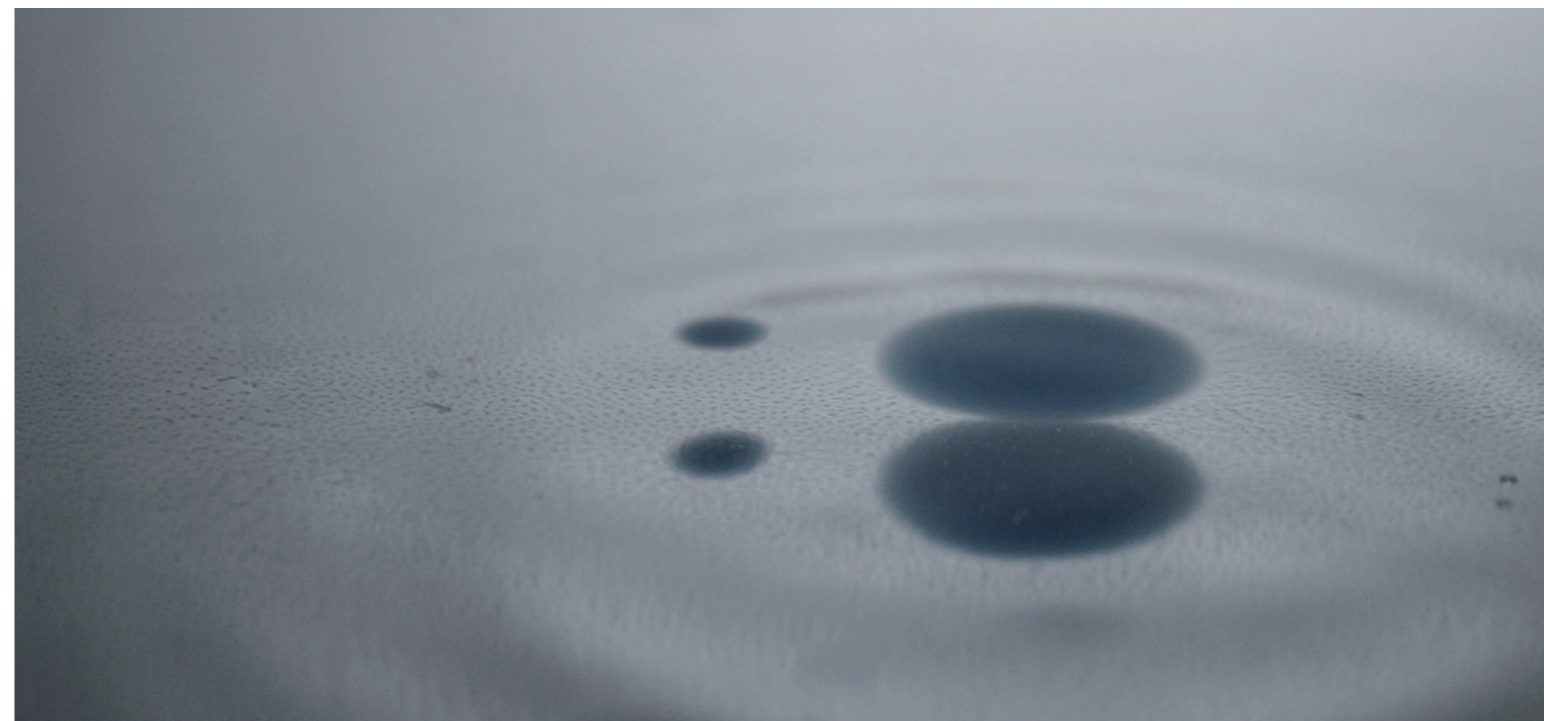
WAVE FUNCTION COLLAPSE

When a quantum wave is measured, it suddenly collapses, meaning that it reduces to a point randomly picked among the wave initial position.



MARBLING

An oil ink drop spreads randomly on the water surface. Rewinding the sequence, the drop of ink suddenly reduces itself to a point.



ATELIER
FORMES ET MATIÈRES

QUANTUM DESIGN

THE QUANTUM DESIGN PROJECT IS A PARTNERSHIP BETWEEN THE ENSCI-LES ATELIERS
AND PHYSICISTS FROM UNIVERSITÉ PARIS SUD AND CNRS.
IT WAS SUPPORTED BY LA DIAGONALE PARIS-SACLAY, THE INSTITUT DE PHYSIQUE OF THE CNRS,
UNIVERSITÉ PARIS SUD AND THE SOCIÉTÉ FRANÇAISE DE PHYSIQUE.

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