

Naturalia

Collana diretta da
Paolo Inglese

1. *The Garland of the Gods. Wild Flowers from the Greek Ruins of Sicily*, Text by Mary Taylor Simeti, Illustrations by Susan Pettee, Palermo 2018.

2. *Mathematics, Nature, Art*, Maria Mannone, Palermo 2019.

When we think of 'concrete' things, we first think of the earth, with trees and plants. When we think of art, we think of shapes, colors, and sounds. When we think of 'abstract' things, one of the first ideas that comes to mind is probably higher mathematics.

This short book proposes hints from mathematics, and in particular from the language of category theory and some of its structures, as a tool for a unified perspective on forms from nature and art, in particular music and the visual arts. Mathematics, moreover, offers a way to map these shapes into sounds and to make music out of it. In this way, the so-called 'abstract nonsense' of categories can be connected with its opposite, the concreteness of nature.



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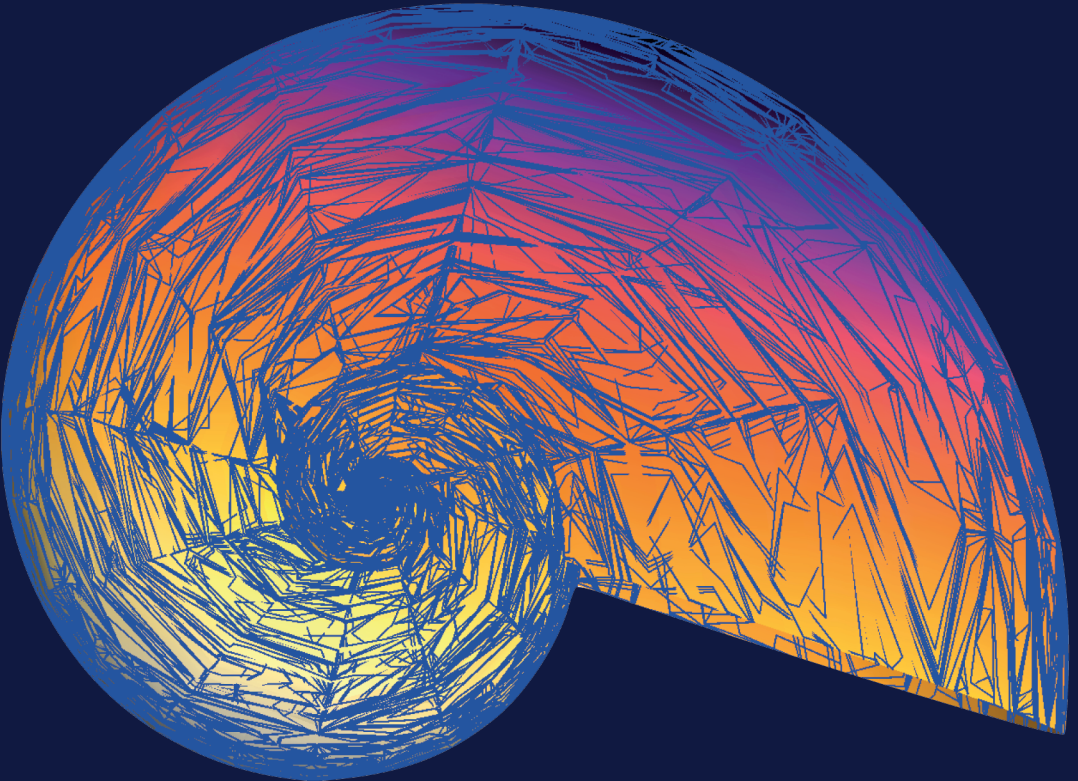
MATHEMATICS NATURE ART

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Foreword by
Paolo Inglese



Maria Mannone was born in Palermo in 1985. She earned Masters in Theoretical Physics, Orchestral Conducting, Composition, and Piano in Italy, and the Master 2 ATIAM at IRCAM-UPMC Paris VI Sorbonne in France. She achieved a Ph.D. in Composition in the US, at the University of Minnesota, where she developed interdisciplinary research in collaboration with the Fine Institute of Theoretical Physics. She participated in international conferences about math and music as a speaker. She gave invited lectures in America, Asia, and Europe. She is an author and co-author of books and articles that also involve relations between music and the visual arts. She created the CubeHarmonic, a musical application of the Rubik's cube, currently under development in collaboration with the Tohoku University of Sendai, Japan.

She is active as a performer, composer, and improviser. Her musical compositions have been performed by the Orchestra Sinfonica Siciliana, during the Festival delle Orestiadi di Gibellina, and during the Arts Quarter Festival at the University of Minnesota.

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