

Curriculum

Giuseppe Maria Catalano was born in Palermo on 29th January 1959. In 1984 he took the degree in engineering with full marks and honour at Palermo University.

Since then he has been carrying on an intense activity of didactics and research in the Representation Department of the same University.

He was appointed Cultore of Design and Cultore of Descriptive Geometry Applications at Palermo University.

From 1985 to now he published several important studies about the Sciences of Space Representation.

He published volumes, articles in the most prestigious international scientific magazines as well as contributions in national and international meetings, treating of Design, Descriptive Geometry Applications and also Survey, Photogrammetry, Perception and Epistemology of Representation, Automatic Design, History of Space Representation, Visual Communication Technique, Ancient Architecture and Earth Science. In the same time he created instruments for survey and representation.

To him we owe *the theory of Cromosintagma*, that explains functioning of the human visual system in choosing the color combinations, *the*

Science of Representation fundamental theorem ,

which is the basis of all the space representation systems and

the theory of absolute no-measurability of space .

He is author of very important discoveries.

In 1992, with the aim to promote a larger and better way of considering the Representation Science, an important thesis, argued yet by great scientists, about the land masses forming is geometrically proved: about 200 millions years ago Earth, much more littler than today, would have been completely covered by the continental shelf. Then, after its split, Earth would have begun to increase until the present state and it would be still increasing.

In 1998 Catalano shows that 240 millions years ago a huge asteroid (km 350 in average diameter) broke the Earth's crust and started the expansion of the terrestrial globe.

Then in 1999, applying the photogrammetric restitution to the Shroud of Turin, he realizes the shocking discovery that finally authenticate the precious relic.

On the Shroud there are dozens of often partially superimposed images of the same objects. The restitution also shows a sequence of images of moving hands.

In 2000 he founded the International Institute for Advanced Studies of Space Representation Sciences.

In 2008 he lays the foundations of the *theory of the dimensions of space*, that is based on the theory of absolute no-measurability, proving the existence of the fourth geometric dimension, in addition to the three dimensions of space-time

Always in 2008 the scientist also demonstrates the General Theorem of Poliedron Prisms on the bases of the topological homeomorphism, reaching, unlike Cartesio's (1622) and Euler's (1752) demonstrations, later generalized by Huilier, extreme slenderness and elegance. The importance of the result consists in the demonstration that homeomorphism can solve or

simplify many other geometrical problems.

In 2011 the scientist demonstrates Kepler conjecture on the packing of spheres, that was considered till now one of the great mathematical non resolved problems.

The demonstration has deep implications, like, for example, the organization of the data in the computers.

The showed theorem not only prove the validity of Kepler conjecture, but too simplicity, brevity and elegance of projective geometrical solutions, compared with gigantic, complex course of computation.

In 2016 ends the development of the dimensions of space theory, which completes the fusion of geometry and physics begun by A. Einstein.

The theory shows that matter and energy are part of the space-time, which has theoretically and experimentally at least ten geometric dimensions, to each of which corresponds a force of nature.

PUBLICATIONS

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SPHERICAL PERSPECTIVE

CO.GRA.S. , Palermo, 1986.

AXONOMETRIC REPRESENTATION OF QUADRIC SURFACES

CO.GRA.S. , Palermo, 1986.

SINHOMOLOGY

CO.GRA.S. , Palermo, 1987.

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SURVEY AT A DISTANCE OF A BODY BY MEANS OF TWO PHOTOGRAMS

CO.GRA.S. , Palermo, 1988.

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CO.GRA.S. , Palermo, 1988.

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CO.GRA.S. , Palermo, 1988.

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CO.GRA.S. , Palermo, 1988.

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NEW DETAILS TO PERFECT THE SCIENTIFIC BASES OF THE REPRESENTATION

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EYE AND PERSPECTIVE

Congress "*Architettura del bello, Architettura del sublime: le risposte del disegno*", Palermo, 1987.

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CO.GRA.S. , Palermo, 1988.

TWO METHODS GRAPHIC RESTITUTION BY MEANS OF TWO FREELY ORIENTED
PHOTOGRAMS

“XII International Symposium of architectural photogrammetry”, Roma, 1989.

THE HORIZONS OF REPRESENTATION SCIENCE

Congress “XII Convegno Internazionale dei Docenti della Rappresentazione nelle Facoltà di Architettura ed Ingegneria”, Lerici, 1990.

ORTHOGONAL PHOTOGRAPHIC PROJECTION

“XIII Symposium of Architectural photogrammetry”, Cracovia, 23-26 ottobre 1990.

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Scientific review “Disegnare, idee, immagini”, anno 1, n. 1, 1990

THE NINETEENTH-CENTURY CARTOGRAPHY OF PALERMO

Congress “Disegno e immagine nella città dell'ottocento”, Trieste, 1990.

THE DIGITAL ARCHITECTONIC BATIGRAPHY

Congress “ V seminario di primavera”, Palermo, 1991

AN ABSENT ACADEMIC DISCIPLINE: THE SCIENTIFIC RESEARCH

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SINGLE PARALLEL PROJECTION

Congress “ Geometria e percezione nei metodi di rappresentazione grafica”, Bari, 1992.

EXPERIMENTATION OF DIGITAL BATIGRAPHY IN THE STEREOPHOTOGRAMMETRIC
SURVEY OF LA GRUA-TALAMANCA CHAPEL DOORWAY IN PALERMO

International Institute for Advanced Studies of Space Representation Sciences, Palermo, 1992

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1992 : THE REPRESENTATION SCIENCE FOR THE STUDY OF EARTH

International Institute for Advanced Studies of Space Representation Sciences, Palermo, 2011

CROMOSINTAGMA

Scientific review *"XY, dimensioni del disegno"*, Roma, anno ottavo, nn. 21 e 22, 1994.

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International Institute for Advanced Studies of Space Representation Sciences, Palermo,
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International Institute for Advanced Studies of Space Representation Sciences, Palermo, 2020

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International Institute for Advanced Studies of Space Representation Sciences, Palermo, 2021

[Back to top](#)