



## Freedom and Creativity in Mathematics



**A SISSA colloquium with mathematician, Claudio Bartocci**

**25 May 2016, 3:30p.m.  
SISSA, Room 128  
Via Bonomea 265, Trieste**

The newest appointment in the SISSA colloquia calendar features Mathematics. Claudio Bartocci, mathematician at the Università di Genova, will give a talk intertwining mathematics and philosophy, specifically addressing the question of what role creativity, and, more generally, freedom play in the study of mathematics.

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For years, along with his research and teaching, Mathematician Claudio Bartocci has dedicated himself to making his field of study more accessible to non-experts. Mathematics is a formal science, a formality, or a "language " created by humans that can be used to describe the world in the experimental sciences. In a way, it remains independent of that world. If, in fact, it is a product of our mind, could there also be room for creative freedom in Mathematics? There is no single position on this, explains Claudio Bartocci, who will speak on freedom and creativity in mathematics at the next SISSA Colloquia lecture to be held at SISSA on May 25 at 3:30p.m. Room 128.

"According to a widely accepted view, there is no room for freedom in mathematics," says Bartocci. "Cantor was of a different mind. In his 1883 foundational paper on transfinite numbers, he wrote that 'the essence of mathematics lies precisely in its freedom.'" Bartocci's lecture will detail Cantor's position, comparing him to other mathematicians and logicians such as Dedekind, Poincaré, Hilbert, and Carnap. He will also present the ideas of 20th century mathematicians, Grothendieck and Schwartz. Bartocci will also comment on philosophical questions about the existence of mathematical objects and the applicability of mathematics .

The lecture is aimed at a wide and varied audience and therefore does not require extensive knowledge of mathematics. In English, open to the public.

### **Bio**

Claudio Bartocci teaches geometry, mathematical physics and history of mathematics at the Università di Genova. His recent scientific work focuses mainly on the following topics: moduli spaces of sheaves on projective surfaces, quiver varieties, and integrable systems. His research interests also include the history of mathematics in the 19th and 20th centuries, and the philosophical aspects of the relationship between geometry and physics. Among his publications: Fourier-Mukai and Nham transforms in geometry and mathematical physics (with U. Bruzzo and D. Hernández Ruipérez, Birkhäuser 2009), Una piramide di problemi (Raffaello Cortina 2012; English edition Birkhäuser, forthcoming) and his most recent works, Demonstrating the Impossible. Science invents the World, (Raffaello Cortina 2014).

### **IMMAGINI:**



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