

**Title:** On why the nature of color is spatial

**Speaker:** Alessandro Rizzi

**Abstract:**

Everybody knows the spatial nature of color and how its appearance can change as context changes. We usually think about color in the same way we measure color, but our visual system is not a spectrophotometer and the world we look at is observed in a context, whatever it could be. Nevertheless, in our mind color is mainly pointwise, and we are used to think at it like a physical quantity. But it is not. Color is formed and exists only in our brain, not at the point or on the surface.



This talk aims at discussing these two alternative approaches, starting from the biological bases of our vision. It reviews some old and new experimental findings on how color sensation is formed in our visual system. From these sets of data, it emerges not only the spatial nature of color, but most important, how this is a mandatory characteristic that has developed to overcome the optical limitations of the human eye. Our visual system has come up with smart methods to extract as much visual information as possible, given the constraints of the visual input. It therefore appears that the next challenge in color science is to incorporate the spatial nature of color in all future metrics and to move from the color at the point to the chromatic appearance in everyday contexts.

**Biography:**

Alessandro Rizzi is Full Professor at the Computer Science Department of the University of Milano. He is researching since 1990 in digital imaging with a particular interest on color, visualization, photography, HDR. He is Senior Editor of Color Research and Applications and Associate Editor of Journal of Electronic Imaging. He has been Topical Editor of the Journal of Optical Society of America A, Secretary of CIE Division 8, IS&T Fellow and Vice President. In 2015 he received the Davies medal from the Royal photographic Society.