

Escher and the Droste effect

Tuesday, 19 June 2012 20:30 (1 hour)

When it comes to illustrating principles of symmetries in physics, the work of the Dutch artist M.C. Escher ranks very high. Escher had an intuitive approach; with the added level of interpretation by physicists and mathematicians his work becomes even more fascinating.

One of M.C. Escher's most intriguing works depicts a man standing in a gallery who looks at a print of a city that contains the building that he is standing in himself. This picture, with the title Print Gallery, contains a mysterious white hole in the middle.

http://www.artchive.com/artchive/e/escher/escher_gallery.jpg.html

Hendrik Lenstra and the speaker Bart de Smit have shown that well known mathematical results about elliptic curves imply that what Escher was trying to achieve in this work has a unique mathematical solution. This discovery opened up the way to filling the void in the print. With help from artists and computer scientists a completion of the picture was constructed at the Universiteit Leiden. The white hole turns out to contain the entire image on a smaller scale, which in the Dutch language is known as the Droste effect, after the Dutch chocolate maker Droste.

<http://escherdroste.math.leidenuniv.nl/images/droste.jpg>

In the talk the mathematics behind Escher's print and the process of filling the hole will be explained and visualized with computer animations.

Presenter: DE SMIT, Bart (University of Leiden)

Session Classification: Public Lecture