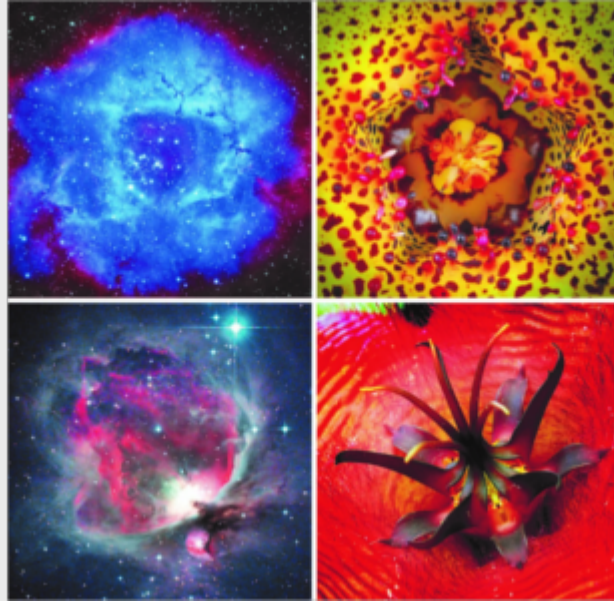


Universal Natural Shapes



Title: Universal Natural Shapes.

When: Tuesday, November 13, (2018), 12:00.

Place: Department of Theoretical Condensed Matter Physics, Faculty of Sciences, Module 5, Seminar Room (5th Floor).

Speaker: Johan Gielis, University of Antwerp, The Antenna Company, Belgium.

In the natural sciences, global anisotropies or (quasi-) periodic local deviations from isotropy or Euclidean perfection in many forms that occur in nature can be effectively dealt with by applying Gielis transformations to the basic forms that show up in Euclidean geometry, e.g. circle and spiral. Since their introduction in botany in 2003, Gielis curves, surfaces and transformations have been used in various fields of science and technology, including in nanotechnology. I will focus on 1) further generalizations and Pythagorean-compact representations, 2) Applications in biology and antennas, and 3) Generalized Möbius-Listing surfaces and bodies, in the context of possible further applications in nanotechnology and nanophotonics.