

Extrait du <BR/>UREM :<BR/>Unité de Recherche sur l'Enseignement des Mathématiques

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# La beauté algorithmique des plantes

- Extra-muros -



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[#x1525](#) : Azimuth sur Google+



Un beau livre gratuit téléchargeable à l'adresse  
<http://algorithmicbotany.org/papers/abop/abop.pdf>

## Extrait de la préface

The beauty of plants has attracted the attention of mathematicians for Mathematics and beauty centuries. Conspicuous geometric features such as the bilateral symmetry of leaves, the rotational symmetry of flowers, and the helical arrangements of scales in pine cones have been studied most extensively. This focus is reflected in a quotation from Weyl [159, page 3], "Beauty is bound up with symmetry."

This book explores two other factors that organize plant structures and therefore contribute to their beauty. The first is the elegance and relative simplicity of developmental algorithms, that is, the rules which describe plant development in time. The second is self-similarity, characterized by Mandelbrot [95, page 34] as follows : When each piece of a shape is geometrically similar to the whole, both the shape and the cascade that generate it are

called self-similar.

This corresponds with the biological phenomenon described by Herman, Lindenmayer and Rozenberg [61] : In many growth processes of living organisms, especially of plants, regularly repeated appearances of certain multicellular structures are readily noticeable.... In the case of a compound leaf, for instance, some of the lobes (or leaflets), which are parts of a leaf at an advanced stage, have the same shape as the whole leaf has at an earlier stage.