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# Along with Constructal Theory

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Editors: J. Hernandez & M. Cosinschi

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# Contents

<b>Foreword</b>	<b>9</b>
<b>1. Constructal Theory in Geosciences and Environnement</b>	<b>13</b>
<i>Adrian Bejan</i>	
1.1 Constructal Theory versus Biomimetics	15
1.2 The Broad View: Biology, Physics and Engineering Unified	18
1.3 Tree Architectures for Traffic and Transportation	20
1.4 Trees for Fluid Flow	23
1.5 River Channels	35
1.6 Turbulent Flow Architecture	42
1.7 Snowflakes	57
1.8 Mud Cracks	59
1.9 The Generation of Flow Configuration is a Natural Phenomenon	63
References	65
<b>2. Dendritic Networks for the Distribution and Collection of Fluids</b>	<b>69</b>
<i>Sylvie Lorente</i>	
2.1 Flow architecture in Civil and Environmental Engineering	71
2.2 The Fluid Mechanics Problem	72
2.3 T- and Y-Shaped Constructs of Streams	74
2.4 The Distribution of Hot Water	77
2.5 Tree Network Developed by Adding New Users to an Existing Network	84
2.6 Tree Networks on a Disc-Shaped Area	86
2.7 Minimization of Flow Path Lengths	92
2.8 Tree Networks with Loops	95
2.9 Conclusion: Multi-Scale Flow Structures, Nonuniformly Distributed	108
References	111

<b>3.</b>	<b>Agglomeration and Deposition of Aerosol Particles: Classical Approach and Constructal Model</b>	<b>113</b>
	<i>Antonio F. Miguel</i>	
3.1	Nature and Importance of Aerosol Particles	117
3.2	Particle Coagulation and Deposition onto Surfaces	118
3.3	Particle Tracking, Agglomeration and Deposition	123
3.4	Constructal Agglomeration and Deposition	124
3.5	Removal of Aerosol Particles by Deposition	126
3.6	Design of Air-Cleaning Devices: Constructal Model	129
	References	136
<b>4.</b>	<b>Shape and Complexity in Living Systems</b>	<b>137</b>
	<i>Antonio F. Miguel</i>	
4.1	The Shape and Living Systems	140
4.2	Measures of Complexity: Scale and Scaling	142
	4.2.1 Scaling in Biology	143
	4.2.2 Why Quarter-Power Scaling?	145
4.3	Constructal Theory and Living Systems	147
4.4	The Principles that Generate Shape in Living Systems: Coral Colonies, Bacteria Colonies and Plant Roots	149
4.5	Shape and Structure of Respiratory System	151
4.6	Pulsating Internal Flows in Animals and Scaling Laws	152
4.7	Constructal Explanation of Kleiber's Law	155
4.8	Flying Animals and Allometric Laws	158
	References	160

<b>5.</b>	<b>Constructal view of the global circulation of the atmosphere and flow architectures of river basins and lung tree</b>	<b>163</b>
	<i>A. Heitor Reis</i>	
5.1	Atmospheric Global Circulation and Climate – From Numerical Experiments to Constructal Theory	165
5.1.1	Simple Constructal Model of the Earth as a Heat Collector and Radiator	169
5.1.2	Latitudinal Heat Transport by Vertical Loops	175
5.1.3	Maximization of Heat Transfer Performance at Daily Scale	177
5.2	From Constructal Theory to Actual River Basins	183
5.2.1	Scaling Laws of River Basins	185
5.2.2	River Networks as Constructal Fluid Trees	186
5.2.3	A Constructal Model of River Basin Development	191
5.3	Constructal Theory of the Lung Tree	192
•	5.3.1 Purpose of the Lungs and Trade-Off between Competing Trends	193
	5.3.2 Other Constructal Features of the Lung Tree	196
	References	198
	<b>Index</b>	<b>201</b>

The Constructal Theory, proposed by Adrian Bejan in 1996, is a deterministic principle for self-organization and self-optimization of natural systems. Its quantitative and holistic approach, which builds an ensemble from small, diverse building blocks, mirrors the logic of growing of natural systems.

The paradigm of constructals implies that geometric forms are produced by construction and optimization of the "smallest" optimized unit. Furthermore, a point-to-point optimization of the flow inside the network leads to the construction of a larger one. In this way the constructal theory seems more intuitive and "natural" than the fractal theory, because it appears as:

General – a specific organization at each scale, dependent on the laws at work at that scale;

Descriptive – one algorithm used in all steps

Predictive – one and only one principle of organization

Realistic – a finite size of the smallest element

This is the first volume of a new series devoted to the workshops of the Faculty of Geosciences and Environnement of the University of Lausanne (UNIL).