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Autore	Oustaloup Alain
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1.7.2.1. Taking into account the past 1.7.2.2. Memory notion; 1.7.2.3. A diversion through an aspect of human memory; 1.7.2.3.1. The serial position effect; 1.7.2.3.2. A model of the primacy effect; 1.8. On the nature of diversity; 1.8.1. An action level to be defined; 1.8.2. One or several forms of diversity?; 1.8.2.1. Forms based on the invariance of the elements; 1.8.2.2. A singular form based on the time variability of an element; 1.9. From the porous dyke to the CRONE suspension; 1.10. Conclusion; 1.11. Bibliography; Chapter 2: Damping Robustness; 2.1. Introduction

2.2. From ladder network to a non-integer derivative as a water-dyke interface model 2.2.1. On the admittance factorizing; 2.2.2. On the asymptotic diagrams at stake; 2.2.3. On the asymptotic diagram exploiting; 2.2.3.1. Step smoothing; 2.2.3.2. Crenel smoothing;

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2.3.2. A non-integer differential equation as a model governing relaxation

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#### Sommario/riassunto

Based on a structured approach to diversity, notably inspired by various forms of diversity of natural origins, *Diversity and Non-integer Derivation Applied to System Dynamics* provides a study framework to the introduction of the non-integer derivative as a modeling tool. Modeling tools that highlight unsuspected dynamical performances (notably damping performances) in an ""integer"" approach of mechanics and automation are also included. Written to enable a two-tier reading, this is an essential resource for scientists, researchers, and industrial engineers interested in this subject area. Ta

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