The Hamsadhwani Group: A Universal Generative Framework for Recursion, Constants, and Conscious Interface

Abstract

We propose the Hamsadhwani Group (HS-Group), a six-element generative algebra defined by the symbols {e, π, i, 1, 0, χ}, as a universal interface mechanism for recursive structure. This group is shown to emerge at the intersection of physical law, mathematical structure, biological recursion, and computational type theory. We offer a unifying perspective through which natural constants, algebraic identities, and consciousness-adjacent systems may be interpreted as instances of a deeper generat...

1 Introduction

In science as in poetry, just the sufficient and the necessary — fading in and away. A structure should be no more than what recursion demands, and no less than what observation can support.

- The need for minimal, universal structures in modern mathematics and physics
- The problem of recursion, constants, and observation
- Aspinīya as philosophical context: recursion, typing, and fields
- Overview of the HS-Group

2 Definition of the HS-Group

- Formal definition: the group elements and their roles
  - e: Generator (growth, exponentiation)
  - π: Curvature (closure, orbital structure)
  - i: Spinor (imaginary rotation, phase shift)
  - 1: Identity (existence, stability)
  - 0: Null (inertness, rest, vacuum)

  - χ: Chirality (handedness, recursion asymmetry)
- Notation and symmetry properties
- Algebraic behavior (non-commutativity, directionality)

3 Applications in Mathematical Structures

- Type theory and polymorphism
- Category theory: objects, morphisms, functors
- Functional programming and covariance/contravariance
- Lambda calculus and recursive construction

4 Physical Constants as HS-Group Elements

- Mapping e, π, i, 1, 0, χ to:
  - Planck's constant, speed of light, Boltzmann constant, G, α
- Table of constants with HS role and functional description
- How HS algebra stabilizes physical interaction

5 Biological and Evolutionary Recursion

- Mutation as recursion hook
- Evolutionary stability and environment adaptation
- Carbon as representative recursive element
- Aspinīya's 74/24/2 principle

6 Consciousness and Interface

- Observer-as-invocation model
- Field and knower (Gita Chapter 13 analogy)
- Typing as rhythm, recursion as awareness
- Chirality as decision and direction

7 Universality and Future Work

- Proposing the HS-Group as a universal typing algebra
- Speculation: HS-Group and symmetry-breaking in cosmology
- Connections to E_8, SU(5), or higher-dimensional unifications
- Potential in artificial cognition, biological simulation

References

To be populated with references to foundational works in physics, math, philosophy, computer science, and Indian metaphysics.

Appendix

- Symbol table
- Extended mappings of constants
- Code snippets (Scala, F#, Lambda Calculus)
- Philosophical interpretations