On the Structure of $\mathbb{Y}_{\mathbb{Y}_m(F)}(\mathbb{Y}_l(K))$

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1 Introduction

We study the structure of the complex Yang number system $\mathbb{Y}_{\mathbb{Y}_m(F)}(\mathbb{Y}_l(K))$, where two independent Yang systems $\mathbb{Y}_m(F)$ and $\mathbb{Y}_l(K)$ interact. This creates a more intricate framework, generalizing both classical fields and Yang systems.

2 Preliminary Considerations

2.1 Definition

Let F and K be fields, and let m and l be independent parameters. The system $\mathbb{Y}_{\mathbb{Y}_m(F)}(\mathbb{Y}_l(K))$ is defined as follows:

$$\mathbb{Y}_{\mathbb{Y}_m(F)}(\mathbb{Y}_l(K)) = \{\text{elements of } \mathbb{Y}_m(F) \text{ acting on } \mathbb{Y}_l(K)\}$$

2.2 Algebraic Structure

- Addition and multiplication are defined between elements of $\mathbb{Y}_m(F)$ and $\mathbb{Y}_l(K)$ via a new algebraic operation.
- Compatibility conditions between the Yang systems are assumed to maintain coherence in the operations.

3 Future Directions

We plan to explore:

1. Interaction between multiple Yang systems.
2. Possible applications to cohomology theories.
3. Structural refinement using higher category theory.