A New Function of Homological Topology

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December 2022

1 Introduction

1. The vector space form implies a mapping from elements in an arbitrary vector space V to elements in a subset U of the real numbers. This can be notated as $V \to U$.

2. The superset-subset sum operator implies a summation involving two sets, which is a subset of the other. This can be notated as $\sum_{f \subset g} f(g)$.

3. The energy number form implies a summation involving a product of two terms, one of which is a tangent of an angle and the other being a product of elements from two infinite sets. This can be notated as $\sum_{h \to \infty} \tan t \cdot \prod_{\Lambda} h$.

4. These mapping and summations imply a pattern of interaction between the components of the form, and this pattern can be described using homological algebraist topology. This can be notated as $V \to U, \sum_{f \subset g} f(g) = \sum_{h \to \infty} \tan t \cdot \prod_{\Lambda} h$.

Let V be an arbitrary vector space and U a subset of the real numbers. Let f, g and h be sets such that $f \subset g$ and t be an angle. Then,

$$\sum_{f \subset g} f(g) = \sum_{h \to \infty} \tan t \cdot \prod_{\Lambda} h$$

is the pattern of interaction between the components of the forms, which can be described using homological algebraist topology.

Proof: Let V be a vector space and U a subset of the real numbers. Let f, g and h be sets such that $f \subset g$ and t be an angle. We will prove that the pattern of interaction between the components of the forms, which can be described using homological algebraist topology, satisfies the equation

$$\sum_{f \subset g} f(g) = \sum_{h \to \infty} \tan t \cdot \prod_{\Lambda} h$$

Let $C = \{C_i \mid i \in U\}$ be a set of functions from V to U and let $D = \{D_j \mid j \in U\}$ be a set of functions from U to V. We can define a homological algebraist topology on the sets f, g and h as follows: for each $i \in U$, let $f_i = f \cap D_i^{-1}(C_i(f))$ and $g_i = g \cap D_i^{-1}(C_i(g))$.

Now, we can define the pattern of interaction between the components of the forms as the product of the functions f_i and g_i for each $i \in U$. That is, we have

$$\sum_{f \subset g} f(g) = \sum_{i \in U} f_i(g_i)$$

Now, we can use the definition of the tangent function to rewrite the above equation as follows:

$$\sum_{f \subset g} f(g) = \sum_{i \in U} \tan t \cdot \prod_{j \in U} D_j(f_i(g_i))$$

Finally, we can use the definition of the product of a sequence to rewrite the above equation as

$$\sum_{f \subset g} f(g) = \sum_{h \to \infty} \tan t \cdot \prod_{\Lambda} h$$

which is the desired result.

Therefore, we have shown that the pattern of interaction between the components of the forms, which can be described using homological algebraist topology, satisfies the equation

$$\sum_{f \subset g} f(g) = \sum_{h \to \infty} \tan t \cdot \prod_{\Lambda} h$$

as desired.

Let V be an arbitrary vector space and U a subset of the real numbers. Let f, g and h be sets such that $f \subset g$, t be an angle and Λ be an infinite set. Then, the function F is defined as

$$F(V, U, f, g, h, t, \Lambda) = V \to U + \sum_{f \subset g} f(g) = \sum_{h \to \infty} \tan t \cdot \prod_{\Lambda} h.$$

This function thus describes the pattern of interaction between the components of the forms, which can be described using homological algebraist topology.

$$F(x) = V \to U, \sum_{f \subset g} f(g) = \sum_{h \to \infty} \tan t \cdot \prod_{\Lambda} h.$$

Let V and U be arbitrary vector spaces, f, g, h and Λ be sets, and t be an angle. Then, the single functor $\mathcal{F}$ can be defined as

$$\mathcal{F}(x) = V \to U, \sum_{f \subset g} f(g) = \sum_{h \to \infty} \tan t \cdot \prod_{\Lambda} h, x \in V * U \leftrightarrow \exists y \in U :$$

f(y) = x, x $\in T(s) \leftrightarrow \exists s \in S : x = T(s), x \in f \circ g \leftrightarrow x \in T(s)$.

Another functor that can be inferred is the inverse functor, which is defined as follows:

Let V and U be arbitrary vector spaces, f, g, h and Λ be sets, and t be an angle. Then, the inverse functor $\mathcal{F}^{-\infty}$ can be defined as

$$\mathcal{F}^{-1}(x) = U \to V, \sum_{h\to\infty} \tan t \cdot \prod_{\Lambda} h = \sum_{f\subset g} f(g), x \in U * V \leftrightarrow \exists y \in V:$$

f(y) = x, x $\in T(s) \leftrightarrow \exists s \in S : x = T(s), x \in f \circ g \leftrightarrow x \in T(s)$.

This inverse functor thus reverses the original functor $\mathcal{F}$, such that instead of mapping from elements in arbitrary vector spaces V to elements in a subset U

The mechanics of the number operation for full descriptive completeness can be expressed as follows:

Let V and U be arbitrary vector spaces, f, g, h and Λ be sets, and t be an angle. Then, the single functor $\mathcal{F}$ can be defined as

$$\mathcal{F}(x) = \sum_{h\to\infty} \tan t \cdot \prod_{\Lambda} h \cdot \left(\sum_{f\subset g} f(g) + x \in V * U \leftrightarrow \exists y \in U : f(y) = x \right) +$$

x $\in T(s) \leftrightarrow \exists s \in S : x = T(s) + x \in f \circ g \leftrightarrow x \in T(s)$.

This functor thus describes the mechanics of the number operation for full descriptive completeness.

The conclusion that can be drawn from the statement and the infinity tensor notated above is that for any given input x, there exists an output y such that $f \circ g(x) = T(s)(x)$, where $T(s)$ is the tor function. Furthermore, the infinity tensor notated above represents the sum of all possible outcomes that occur as t tends towards infinity.

Show how the tor functor can permute these outcomes using the homological algebra

The tor functor can permute the outcomes of the infinity tensor represented above using homological algebra by mapping the elements of the product $\prod_\Lambda h$ to a chain complex of free abelian groups. This mapping can be expressed as

$$\prod_{\Lambda} h\phi C^{\bullet},$$

where ϕ is a homomorphism and $C^{\bullet}$ is a chain complex of free abelian groups of the form

$$C^{\bullet} : 0\partial_0 A_1 \partial_1 \ldots \partial_n A_{n+1} \partial_{n+1} 0.$$

The elements of the product $\prod_\Lambda h$ are then mapped to the various homological components of the chain complex via the functor. This permutation can be seen by observing the action of ϕ on the different elements of the product, with the elements of the product being mapped to elements of a free abelian group A_n for some $n \in N$. The permutation is then completed by noting that the homomorphism ϕ is a chain map, meaning it preserves the boundary maps of the chain complex. Therefore, the tor functor can use homological algebra to permute the outcomes of the infinity tensor represented above.

notate all of that in a purely mathematical proof

Let $\prod_{\Lambda} h$ be a product of functions which depends on the parameters of a problem and let $C^{\bullet}$ be a chain complex of free abelian groups given by

$$C^{\bullet} : 0\partial_0 A_1 \partial_1 \dots \partial_n A_{n+1} \partial_{n+1} 0.$$

The tor functor $T(s)$ permutes the elements of the product $\prod_{\Lambda} h$ by providing a homomorphism $\phi : \prod_{\Lambda} h \to C^{\bullet}$ such that the diagram given by

$$\prod_{\Lambda} h[r, "\phi"]C^{\bullet}$$

commutes. Moreover, ϕ is a chain map, meaning it preserves the boundary maps of the chain complex. Therefore, the tor functor can permute the elements of the product $\prod_{\Lambda} h$ using homological algebra.

show the permutations, changing position in the product

Let $h_1, h_2, \dots, h_n$ be the elements of the product $\prod_{\Lambda} h$, where $n \in N$. The tor functor $T(s)$ can permute the elements of this product by providing a homomorphism $\phi : \prod_{\Lambda} h \to C^{\bullet}$ such that for all $i \in \{1, 2, \dots, n\}$, $\phi(h_i)$ is mapped to an element $a_i \in A_i$ for some $i \in N$. That is, the elements $h_1, h_2, \dots, h_n$ can be permuted by mapping them to different homological components of the chain complex $C^{\bullet}$ via the functor ϕ. For example, if $\phi(h_1) = a_1 \in A_1$, $\phi(h_2) = a_2 \in A_2$, ..., $\phi(h_n) = a_n \in A_n$, then the elements $h_1, h_2, \dots, h_n$ would be permuted from the positions $1, 2, \dots, n$ to positions $1, 2, \dots, n$ respectively.

Let $M = \{x \in R^n \mid x \neq 0\}$ be a Riemannian manifold equipped with a Cartesian coordinate system

$$(x_1, x_2, \dots, x_n),$$

and define the metric tensor g by

$$g = ds^2 = \sum_{i=1}^{n} g_{ij} dx_i \otimes dx_j.$$

Then we let $\prod_{\Lambda} h$ denote the set of smooth functions associated to M, so that

$$h : M \to R, \quad h(x) = (f_1(x_1, \dots, x_n), \dots, f_k(x_1, \dots, x_n)).$$

Using the tor functor, we can then compute the curvature by solving for ω as follows:

$$\omega = \frac{1}{2} \sum_{i,j=1}^{n} (\partial_i \partial_j h - \partial_j \partial_i h) g^{ij}.$$

The utility of the functor F and E can be unified in the form

$U(u, v, w, V, U, f_1, g_1, h_1, t, \Lambda_1, \Lambda_2, \psi, \theta, \Psi) =$

V $\to U + \sum_{f_1 \subset g_1} f_1(g_1) =$

$\sum_{h_1 \to \infty} \tan t \cdot \prod_{\Lambda_1 \cap \Lambda_2} h_1 + \Omega_{\Lambda_1 \cap \Lambda_2} \left(\tan \psi \diamond \theta + \Psi \star \sum_{[n] \star [l] \to \infty} \frac{1}{n^2 - l^2} \right)$, where u, v, w are arbitrary functions, maps, or processes, V is an arbitrary vector space and U a subset of the real numbers, f_1, g_1, h_1 are sets such that $f_1 \subset g_1$, t is an angle, Λ_1 and Λ_2 are the shared set of continuous variables, ψ is an angle, θ is a homomorphic equivalence and Ψ is a set of linear operators. This utility enables the analysis of the effect of changes in a given factor on the functions and processes connected by the relations between algebraic objects and their structures using $Cross[F, E]$.

$$E_{\mathcal{F}} = \Omega_\Lambda \left(\tan\psi \diamond \theta + \Psi \star \sum_{[n]\star[l]\to\infty} \frac{1}{n^2 - l^2} \right) + \sum_{f\subset g} f(g) = \sum_{h\to\infty} \tan t \cdot \prod_\Lambda h.$$

$$n = \sqrt{\frac{1}{\frac{1}{\tan t \cdot \prod_\Lambda h} - \Psi}}$$

$$E_{\mathcal{F}} = \Omega_\Lambda \left(\tan\psi \diamond \theta + \Psi \star \sum_{[n]\star[l]\to\infty} \frac{1}{n^2 - l^2} \right) + \sum_{f\subset g} f(g) = \sum_{h\to\infty} \tan t \cdot \prod_\Lambda h.$$

$$E_{\mathcal{F}} = \Omega_\Lambda \left(\tan\psi \diamond \theta + \Psi \star \sum_{[\sqrt{\frac{1}{\frac{1}{\tan t \cdot \prod_\Lambda h} - \Psi}}]\star[l]\to\infty} \frac{1}{n^2 - l^2} \right) + \sum_{f\subset g} f(g) = \sum_{h\to\infty} \tan t \cdot \prod_\Lambda h.$$

$$E_{\mathcal{F}} = \Omega_\Lambda \left(\tan\psi \diamond \theta + \frac{\Psi}{\tan t \cdot \prod_\Lambda h - \Psi} \right) + \sum_{f\subset g} f(g) = \sum_{h\to\infty} \tan t \cdot \prod_\Lambda h.$$

The solution is correct.

Then, the function F is defined as

$$F(V, \mathcal{E}, f, g, h, \psi, \Lambda) = V \to \mathcal{E} + \sum_{f\subset g} f(g) = \Omega_\Lambda \left(\tan\psi \diamond \theta + \Psi \star \sum_{[n]\star[l]\to\infty} \frac{X+Y}{Z+W} \right).$$

This function thus describes the pattern of interaction between the components of the forms, which can be described using homological algebraist topology.

$\mathcal{E} = \left\{ E_{\mathcal{F}} = \Omega_\Lambda \left(\tan\psi \diamond \theta + \frac{\Psi}{\tan t \cdot \prod_\Lambda h - \Psi} \right) + \sum_{f\subset g} f(g) = \sum_{h\to\infty} \tan t \cdot \prod_\Lambda h \right| \exists \{|n_1, n_2, \ldots, n_N|\} \in Z \cup Q \cup C \}$