

Not Theory

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Abstract: Not theory is a derivation from standard Knot Theory, inspired by Knots and topological spaces in the E8 theory of Unification.

In Not Theory, we consider an E8 based fiber theory of nature, extending it to a simulated universe as strands. Not theory is about the mathematics of the application of 'nots' to strands.

In this paper, we consider a closure proof, and proof of completeness to not applications on arbitrary not as applicable to a particle and quasi-particle model.

What:

Axioms: A strand is a fundamental resonance of nature starting in one singularity and ending in another. These two singularities are in E8 space-time, with many operators acting on them.

Axiom: Any quasi-particle or particle can be described as an aspect of a strand, a resonance in space-time.

Theorem 1: **Closure:** Operation of a not on a strand leads to a resonance in energy time of space and momentum which is also a strand.

Theorem 2: **Completeness:** All particle and quasi-particle interactions can be represented as strands.

How: We use an automated theorem prover to prove the above two theorems.

Why: Earth 1 and Earth 2 are completely populated to chocking levels of land and water pressure, we consider an overflow Earth 33, as inspired by the franchise Flash in science fiction.

Given the overpopulation on Earth, we need Unification Theories to spawn Universes in a multiverse reality and a fork of a child Universe called a bifurcation leads to Earth 33. If E8 is one competitor, M-theory or string theory another, strands are the latest.

Ad: "Strand Theory is just the right theory you need, we compete with the latest entertainment"

Introduction:

Knot theory in E8 and E8 space:

*"The fundamental geometric idea of E_8 Theory is that our universe and its contents exist as quantum excitations of the largest simple real quaternionic exceptional Lie group, $E_{8(-24)}$. This is described via an extension of **Cartan geometry** employing a **superconnection**. The relevant Cartan geometry is modeled on **Klein geometry**, beginning with a **homogeneous space**, G/H , in which the initial Lie group is $G = E_{8(-24)}$ and the subgroup is $H = SL(2, \mathbf{C}) \times S(U(3) \times U(2)) \times \mathbf{Z}_3$, in which $\mathbf{Z}_3 = \{1, T, T^2\}$ is the **cyclic group** of order three corresponding to a triality automorphism, T , of $E_{8(-24)}$." (Contributors to Wikimedia projects 2007)*

Knot Theory:



A knot is created by beginning with a one-dimensional line segment, wrapping it around itself arbitrarily, and then fusing its two free ends together to form a closed loop (Adams 2004) (Sossinsky 2002). Simply, we can say a knot

K is a "simple closed curve" or "(closed) Jordan curve" (see Curve) — that is: a "

$K : [0, 1] \rightarrow R^3$, with the only "non-injectivity" being

$$K(0)=K(1)$$

Topologists consider knots and other entanglements such as links and braids to be equivalent if the knot can be pushed about smoothly, without intersecting itself, to coincide with another knot.

The idea of **knot equivalence** is to give a precise definition of when two knots should be considered the same even when positioned quite differently in space. A formal mathematical definition is that two knots

$$K_{\{1\}}, K_{\{2\}}$$

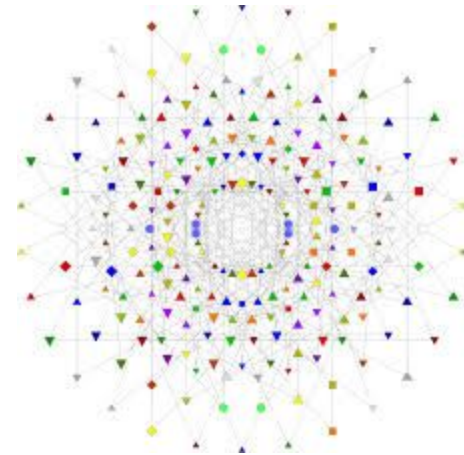
are equivalent if there is an orientation-preserving homeomorphism

$$H: R^3 \rightarrow R^3$$

with

$$h(K_1)=K_2$$

¹(Contributors to Wikimedia projects 2002)



E8 is a recent theory in 8-dimensional space and nine-dimensional space-time. We extend the nature of the Universe as knot theory on E8 space-defining knots as operators on fibers in E8 space.

Nots are defined, similar to knots on E8 space with strands defined instead of fibers with two singularities defined by $[0, P, 00]$ with 0 and 00 defined by a single singularity $[w]$, The single singularity could be described as a spin foam or a quantum foam $[w,b]$ as a set of two opposing singularities or the polarization principle of quantum foam. On P we define any number of Nots $N(P)$, where any number of Nots can be composed. We thus prove, completeness and closure.

¹ "Knot theory - Wikipedia." https://en.wikipedia.org/wiki/Knot_theory. Accessed 29 Jul. 2019.

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We use Wolfram's Automated Theorem Prover,

```
"FindEquationalProof [thm, axms]
  tries to find a proof of the equational logic
  theorem thm using the axioms
  axms." ("FindEquationalProof—Wolfram
  Language Documentation" n.d.)
```

Closure Proof:

```
Theorem =
{
S_i belongs_to SS
}
```

Axioms =

```
{
SS is the space of strands
 $S_i = \oplus N_i(S_k)$ 
```

```
For any N = [N_1, N_2, ..... N_i]
}
```

Completeness Proof:

Refer accompanying paper on strand theory.(to be published)

Discussion, Conclusions and Future Work. Knots in E8 is an extension from R³ maps to E8 space, as knots are easily generalized to arbitrary dimensions, we discuss knot theory in arbitrarily large dimensional spaces in an paper.

In the next paper we present the details of an automated proof using Wolframs automated prover. Future work on strand theory and Not theory will prove the oscillator circuit, as an application of Not Theory, an illustration of Not based Knots in strand based fabrics.

References:

- Contributors to Wikimedia projects. 2002. "Knot Theory - Wikipedia." Wikimedia Foundation, Inc. November 29, 2002. https://en.wikipedia.org/wiki/Knot_theory.
- . 2007. "An Exceptionally Simple Theory of Everything - Wikipedia." Wikimedia Foundation, Inc. November 15, 2007. https://en.wikipedia.org/wiki/An_Exceptionally_Simple_Theory_of_Everything.
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