

### **Physics Requirements:**

The Standard Model

### **Mathematical Requirements:**

Combinatorics

Recursions

Summation per Gauss:  $N(N-1)/2$

Topological space contra metric space, and homeomorphism.

A small part about Euler paths.

Basic set theory.

### **Premisses:**

$N \in \{0, 1, 2, 3, \dots\} \notin \infty$

$\lim(n \rightarrow \infty)$

Bases as strictly Euclidean right-angular geometric figures. Mimicking measure polytopes.

As e.g., three or four dimensions corresponding to a cube or a hypercube.

Let the set operator  $\{\}$  with elements sequentially recurred indicate bases, with the "number of  $\{\}$ s" indicating which base is started from. Characterized by the rightmost element always being  $\emptyset, 0, 1,$  or ... where an arbitrary starting point is provided. That, always being the first element in a recurrence, defined as a base.

Gaal's Ladder (GL):

From an arbitrary Nth dimensional figure corresponding to a base.

Recure by for all N-1 dimensional figures, applying mimicked measure polytopes corresponding to the base between each pair, within the Nth dimensional figure these are a part of.

Bub:

Introduce a continued GL recurrence. And a minima for up to, but excluding, one as a base, of a step higher than the base.

As one approaches infinite recurrences, for each of the recured directions corresponding to the N-1 dimensional figures in the originals. Handle the infinite amounts of ever increasing e.g. vertices almost as a volume increase, meaning these will intersect on GLs far out in the recurrence. Which is proposed right-angular and generalized as shown in provided links under upcoming sections. First yet not completely mimicked as 2010's cube.

Looking at the resulting figure from e.g. a cube as the base while leaving out the GLs gives almost the normal hypercube. Except the outer or inner most missing and the newly introduced, 6 in that case, holding no relation and are disjoint other than the original cube. First yet not completely mimicked as Horus' Cube.

The GLs on the other side of the Bub are referred to by closing GL, as they close the gaps introduced by the recurrence happening in topological space in a natural way. Remains from recurring infinite amounts taking up all angles, what can best be described to be like the generalized circumference of the sum of all the recursions, will draw out to a right-angular result that introduce new node points.

Until the layer that contains a N+1 dimensional figure, with mimicked N+1 measure polytopes as subsets, is reached, initializing to the base. Continue with a new closing GL layer internally for all figures corresponding to the base and then previously occurred higher and higher dimensional figures, which can feel to be externally at first. And in short increases by one layer for each time we Bub, and will also close together Bub orderly.

The forementioned pair unify many key elements from: <https://youtu.be/2s4TqVAbfz4>

3CLS:

Cycle as: the cyclical tree-structure formed by one set of recurring GLs, that Bub to connect back in on itself. Which are homeomorphic in nature.

Cycle-Connection as: the GL that form connections to multiple cycles.

Loop as: the second half-cycle formed when the first half does not connect back in on the same GL as it already has a Cycle-Connection to.

Structure as: the set of all cycles when saturated, as in finished changing properties.

Keeping in mind that 3CLS is achieved via Bub resulting from GLs, introduce constantly upheld "cycle-type areas" to categorize the general cycle in the regions of subsets of the whole structure.

Mainly distinguished by bases, their N-1 dimensional figures, and the interactions of these. Yet also the subset of structures generally formed by the paths of the cycles here.

*Other concepts that showed lesser relevance are explored in earlier writings, that have either been redefined, altered to a more precise superset later on, or completed. These concepts were briefly explained where needed.*