Bundle Gerbes and Euclidean Apartments

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Abstract

We continue from our last session on $\mathbb{E}_\infty$-spaces. Here, we discuss apartments as graphs. The radial completion of the apartments relate to bundle gerbes and also Mochizuki's ideas of the θ-link.

Chapters

Chapter 1 | Bundle Gerbes

We will start with the most trivial construction. Let $\mathscr{U}$ be a U(1)-bundle. The bundle gerbe multiplication is given by the isomorphism:

$$\mathcal{U}^*_{y_1} \otimes \mathcal{U}_{y_2} \otimes \mathcal{U}^*_{y_2} \otimes \mathcal{U}_{y_3} \simeq \mathcal{U}^*_{y_1} \otimes \mathcal{U}_{y_3}$$

describing a bundle gerbe (P, Y) with $\mathscr{U}$ acting on Y such that P=$\delta\mathcal{U}$.

Assume that Q is an integral scheme, which is classified by a stack Q_{Stk}. We define an n-fold cover as a twist of the *trivial gerbe* which *covers* some smooth section of alcoves, mod torsion. In order to do this, we write the torsor $\mathfrak{tors}(\hat{u})$, and assign to it a display:

$$\phi_n: \mathfrak{tors}(\hat{u}) \to \Omega^{\mathcal{U}}_{\hat{u}},$$

which is effectively a *covering sieve* for each of the analytic elements of $\mathscr{U}$. For instance, we have the classical Hermitian immersion

$$\phi_2: \mathfrak{tors}(\widehat{\mathbb{R}}) \hookrightarrow \Omega^{\mathcal{U}}_{\hat{\mathbb{R}}^2},$$

which *foliates* a copy of a hyperbolic space which locally approximates $\mathbb{R}^2$. This is called a "geodesic lamination" in the literature; see, e.g. [M.M.].

Right off the bat, we see the utility of working with *bundle gerbes*; for starters, they are typically pretty general objects, which means they have utility in lots of situations. Secondly, a bundle gerbe may have an *obstruction* to *lifting* to some stack, such as

$$\mathbb{R} \twoheadrightarrow_i \mathbb{C}\cup\{\infty\},$$

which means that they are also used to compute topological invariants[1].

Let $\mathbf{K_1}$ be an open cover of a Kolmogorov space $\mathbf{K_0}$. We write by

$$U(1) \times \mathbb{Z} \times U(1) \rightarrow \mathbb{Z}_p \simeq \mathbf{M}$$

the set of all automorphisms of $\mathbb{Z}$ with torsion class induced by a prime integer. This gives us a p-adic covering of the space rep($\mathbb{Z}$), which realizes the field of integers. Effectively, this is a "twisting" of the original space; we see that, in the modular variety of $\mathbb{Z}_p$, hyperbolic curvature is introduced by setting exp(p) to be a valid function of the inner model of $\mathbf{M}$. Whence there is no k-rational splitting $\mathbf{M} \rightrightarrows_k \mathbf{M}'$, we say that there is an *obstruction* to *surgery* on the manifold mfld($\mathbb{Z}_p$). This is simply because there are not enough divisors for the relevant invariant, in this case some unspecified ideal, $\mathbf{i}$, which determines the Ricci flow over $\mathbf{M}$.

Whence observing an obstruction to surgery, one obtains a significant amount of information about the constituent submanifolds which one wishes to isolate. One interesting question is, "is there a way to ease such an obstruction?" This gives a clue as to what extent the *perverse* structure obtained by deforming a structure is *actually related* to the *genuine manifold*(s) one wishes to obtain.

A good way to do this is to introduce some projective measure, $\mathbb{P}_\mu$, which physically corresponds to the Kerr metric.

$$\mathbb{P}_\mu = \mathcal{U}_{y_1} \otimes \overline{\sum_d} = \overline{\mathcal{U}^*},$$

where $\overline{\sum_d}$ is the sum of all orthonormal vectors raised to the power of the number of dimensions of the system being measured. We then apply the formula

$$\int_0^\pi (1/2) sin\theta d\theta\, \overline{\mathcal{U}^*} = LI$$

to obtain the *Louisville current* of a time-dependent equation varying periodically in degree. This type of a metric is actually very nice for certain spaces with holomorphic displays, for instance Teichmüller spaces, and spectral slices of $\mathbb{E}_\infty$ spaces. As it turns out, we can relate LI to the Chern class of a 1-cocycle by the formula

$$LI = \overline{\mathcal{U}^*}\mathbb{B}^{-1},$$

where $\mathbb{B}^{-1}$ the inverse of the *fine structure constant*. This provides us the θ-link

$$\theta^R:\ LI \Rightarrow \mathcal{U}\Omega_\kappa^{\mathbb{P}_\mu}$$

such that a right action on the matrix of the current provides an appropriate approximation of some corresponding eigenstate of a complex system. The bundle gerbe is used to provide a "test geometry"

[1] See [Ger].

for the compass, so that its trivial fiber bundles can act via nilpotent rotations and thus minimize the work required to form an adequate representation of the underlying invariants.

Indeed, the trivial bundle gerbes is about the simplest structure one might ask for in terms of analyzing the periodicity of a group of functions. It allows one to associate to each Lie group a *hypercharge direction*, H, corresponding to a smooth deformation of charts under a coherent atlas. That the atlas is coherent follows from [E], where we proved that period-preserving maps are *at least* quasi-coherent, and from the fact that both sides of the transformation have a common θ^{R}-link.

Proposition 1.0.1 Any monad $\mathbf{T}=(\theta,\mathfrak{g},\mathscr{U})$ can be used to generate a Serre-fibred space.
Proof We let $\mathfrak{g}$ be a small category with a group-like structure. We would like here to introduce the notion of a *Thurston measure*[2], defined as

$$\mu_{THUR} = \lim_{\leftarrow} \Omega_* \otimes_{\theta} \mathfrak{g}$$

We let there be an admissible monic $\mu_{THUR} \to \mathbb{A}_{\mathbf{n}}$ into a category with affine presentation. Then $\mathbf{T}$ generates, by $\mathfrak{g}$-action, the affine space, which has as its pullbacks Serre fibrations.

A U(1) bundle gerbe acts on these Serre-fibered objects, which are 1-connected; however, they are not only fibrations *of* simply connected spaces. Let $\mathscr{N}_2$ be the two-torus. Then $\mu_{THUR}=\{*\}$ for two distinct points, and is densely equal to the image of a Hopf fibration elsewhere. As by [ger], we identify μ_{THUR} with the 2-form[3] ϱ. That ϱ is integrally closed in Ω_* follows from "transporting" left inverses along the compass to alternate orientations, notably by deforming the constant π. This transportation is the current of geodesic laminations as defined previously, but for which we lacked a final notation. We write λ_{CUR} for the generalized current on a Minkowski or other $(2^n \pm k)$-manifold.

Definition 1.0.2 The *generalized current* (of a compass, manifold) is the capacity to *realize* a curl functor at any given spatial point using a locally constant function. We write it

$$\lambda_{\mathrm{CUR}} = \widetilde{\nabla}_{\{*\}} = \oint \bar{\Sigma}/\mathrm{t},$$

where t is the time dimension.
Proposition 1.0.3 For two mutually orthogonal manifolds o_1, o_2, assuming polarity distinct, there is a differing canonically graded truth value, assuming truth values follow a monotonically decreasing discrete chain from the sup-pole of a compass to the inf-pole, or vice versa.
Proof Since we have distinct polarities, and a fixed object in motion as the target of $\mathbf{Scene}_{\rightarrow}$, we have $\mathrm{Rat}(\tau\Sigma) > \mathrm{Rat}(\Sigma)$, for τ an arbitrary algebraic character in [0,1]. A field of scalars equipped with multiplicative potentials has more possible outcomes than the outcome of a set of potentials itself.

[2] See [Cur]
[3] Loc. cit. Pg. 6

The Kerr metric characterizes transfinite and generic spectra in the fashion that $\mathbb{P}_{\mu}(*) \rightarrow \mathbb{P}_{\mu}(*)$ does not preserve polarity, which makes it subject to distinct lensing conditions given on the choice of display block. A bundle gerbe takes a kernel of the source and maps it to a cofibration of the target, thus θ-linking them together.

$$\{\pm\}^{n} \simeq_{\theta} \Sigma_{n}\mathbb{B}^{-n}$$

This is amusingly similar to *Rapoport-Zink* spaces, and in fact, that's because this is a derived version of that synthetic concept. We introduce two new *ghost* modes of polarity; $\mathbb{b}^{\pm}$, and $\{*\}^{-1}$. These are accessible through *n-chains* of forgotten *i-truncated* data, in some hypothetical model where it is obtainable. This data reliably forces a transfer of witnesses from the left-hand side to the right, and vice versa.

The Liouville current was a single example of an automorphic kernel which splits at the co-kernel level. It is recognizable because it was colorful, but there are other, more transparent formulations of these currents. For instance, take *any field*, $\mathfrak{F}$, and let $\mathfrak{F}_{ex}$ be its extension. Assuming tame inverse limits are preserved under

$$\lim_{\leftarrow}(f_i) : \mathfrak{F} \rightarrow \mathfrak{F}_{ex},$$

we can take the Dixmier Douady class of the gerbe bundle $\mathscr{U}\mathfrak{F}_{ex}$ and obtain (a) segment(s) of a Hodge filtration. The *ghost modes* show up as isofibrations $\mathfrak{F} \rightarrow \mathfrak{F}'$, which are projective, but not exact onto the extension of $\mathfrak{F}$. We can always take the carrier set, $c(\mathfrak{F})$, and transform it into a compact moduli center, $\mathfrak{F}_{MOD}$ so that the lensing of the space then conforms to a *hyper-conformal* boundary, consisting of at least a complex analytic locus, and two or more real loci. We then say that the function

$$\boldsymbol{P} : \mathfrak{F} \rightarrow \mathfrak{F}_{*}'$$

Is the *proper* topos for the generalized kernel to comport with a $(2^{n} \pm k)$-manifold of arbitrary representation.

This is an example of f_i being inserted as a *miniscule cocharacter* which generates a product of $\mathfrak{F}$, "for free." Here, i is an alcove, and f is a small-category fusion rule. By this, we mean that since f_i is already "cohomologically affine"[4], so is the space to which it vanishes as a representation.

$$\bar{\epsilon}\Omega_{x}^{y}\delta_{i} \in \boldsymbol{P}_{\rightarrow_{f_i}}$$

$$\Omega_x{}^y \xleftarrow[\quad p^{-1} \quad]{} \bar{\epsilon} \xrightarrow[\quad p^{n} \quad]{} \mathbb{P}_n$$

[4] [gms], pg. 7

Definition 1.0.3 An object ƚ is called an *adic brake* if every torsionfree subclass generated by the weakly chained space $p^{\pm n}$ is the centralizer of a *locally perfect* ring. | An adic bake is the one-point sum over a pluripotent *packet* of Gaussian diffusion data.

The sum is taken at the negative nth term and rendered absolute at the positive nth.

1.1 **Scenes with multiple displays**

A scene with multiple displays, $\phi_i, \ldots, \phi_n$ obeys the fiber-product rule $\phi_i \cap \sum_n \phi_n \mapsto f(p^{\pm n})$. Each of the intersecting affine surfaces summed over are cotangent to at least *some* locally small manifold.

The functional form, $f(p^{\pm n})$, in particular should not be thought of as having a strong representation; rather, it is a more general *shtuka*, and is something like a *formal power series*

$$x^{a^{\cdots^{n}}}$$

This is somewhat justified, as the *i-truncated* (portion of a) braid group over **i**{...} is effectively lensed, and so has either a tightly or loosely laced presentation. Here, {...} is the *adic brake* of the intermediate ring of sums.

An interesting result (at least to the author), springs from supplying each character in the chain a unique sub-object identifier, say as a subscript. Then, one obtains

$$x_0^{a_1^{\cdots^{n_n}}}$$

where the subscript is forgotten after, e.g. 1. In this example, we are working with a Boolean base, but it may be extended by an easy extension of the diagonal. So, {...} is actually a *morphism*, $a_1 \rightarrow_{\ldots} n_n$; by exponentiation of sets, we let n^n denote the number of self-maps (automorphisms) of n, and thus, {...} is a functor which produces a vocabulary of at least 2^{ω}. Thus, our original example, $x^{a^{\cdots^{n}}}$, obeys Cantor's diagonalization argument, and is therefore isomorphic to $\mathbb{R}$. Here, we analytically continue this to any Hermitian space.

Put another way, $a_1 \ldots_{\Theta} n^n$ describes a space obeying the Susslin chain condition, forming a Countryman line from 0+1 to n. This is a link from the binary regime to the polymodal sup-pole.

1.2 Categorically extending objects along a gerbe

Let a be a one-object category. Let there be an arbitrary map $a \rightarrow b$ to a category with many objects.

Where do we insert a? Well, some intuition tells us that it is perhaps at the boundary, as all sections of the one-point space are isomorphic to their own boundary. However, we can also instead choose to insert it randomly into a *nucleus* of the graph; that is, a section of *n-separated* spaces which are locally at the center of the graph.

Now, one has that a, as a *single object*, with pluripotent determination, has some more or less probabilistically determinant realization, which is forced by the distance metric at the boundary. So,

$$a \propto_{\text{cent}} \mathrm{B}_{\mathrm{n}}$$

becomes the correlation from an otherwise information-free packet and some gravitational centralizer. Here, we are letting the subscript denote an inertial stabilizer, which is simply to say a stabilizer in the inertial stack I_{Δ}.

This is interesting, because it means a *higher number* of balls are determined by a *much lower number*! This is a sign that the probabilistic determination between the two events, the central element, and the large-neighborhood representation, is sharp! Now, by coupling time to a by $a \leftrightarrow \mathrm{t}$, we have some quantity of information contained in that time, $\log_{\mathrm{k}}(\mathrm{n}+\mathrm{a})$.

To explain this, we use *black hole phenomenology*; the relatively minimal in brightness can appear to have a surprisingly intricate spectral distortion if it were possibly fathomable. Thus, they mirror white light by creating the dual phenomenon. This is seen as a reflection of sets

$$\Sigma_{i} \rightarrow \text{Sets}$$

We have so far been interested in the Σ_{∞}-space version of this story, but now we will shift our point of view to thinking of miniscule *alcoves*.

Chapter 2 | Miniscule Alcoves

Recall from our retelling of the Bruhat-Tits story that an *alcove*, λ, is *miniscule*, if it is generated as a rational quantity by a tiling space invariant.

This gives to $\lambda \rightarrow \frac{1}{\xi}\lambda\ (\mathfrak{F})$, where $\mathfrak{F}$ is any sufficiently large field, a nice one-to-one correspondence with certain hyperbolic metric spaces, namely the anti de-Sitter Spacetime and the conformal variety of, specifically, $\mathbf{T}_{\mathbf{gm}}$.

For the first set of n apartments, a correspondence between the generative factor and the opf-map into a real Lie algebroid. For any apartments thereafter, there is an unspecified cardinal invariant, which is presumably inaccessible to us. We identify the cokernel, id_{δ}, as a *real representation* of some geometric constant. So, there is a "kite" (a certain diagram), which includes

$$\mathrm{Id}_{\delta} \times \mathrm{Id}_{\delta}^{-1} \rightarrow_{\mathrm{op}} \mathbb{B},$$

where $\phi_{op}(\mathrm{fib}(\mathbf{x}))$ is the function mapping co-kernels to terminal objects in separate slice categories. This is because the flat morphisms $\mathrm{Id}_{\delta} \rightarrow \mathbb{B}$ are tame for all $\lim_{\leftarrow} \mathbb{i}\mathbb{b}^{\pm}$.

$$\mathrm{Id}_\delta \rightleftarrows \mathrm{Id}_\delta \times \mathrm{Id}_\delta \rightarrow \mathbf{St}(\mathbf{X},\mathbf{Y}) \simeq \mathbb{M}_{\mathrm{ST}}$$
$$\delta_{\mathrm{ij}} \simeq \mathbf{M} \simeq_{\mathbf{HUR}} \mathbb{C}_z$$

2.1 Example of a unique witness which is not transcendental

Using the zero-cycled Chow group, we have:

$$CH_0\delta_i \rightarrow \epsilon\mathfrak{R}$$

When δ_i corresponds to the Witt ring completion $\mathrm{W}(\overline{\mathfrak{K}})$, there is the obvious trivial map $\mathrm{Hom}(\mathrm{CH}_0,\mathrm{W(k)}) \rightarrow \epsilon\overline{\mathfrak{K}}_{\text{ét}}$. This functor is algebraic over any smooth stack, and some discrete stacks as well.

2.2 Curve complexes with transcendentals

Let $\mathscr{C}(\mathrm{S})_\bullet$ be a based curve complex. Then, we can write the transcendental ordinal κ as a strictly decaying zero-object in the category of sets with superreals. If there is a refinement for every similitude over κ, then we say $\kappa \rightarrow \{*\}$ is a *supercompact cardinal*. We say that the uncountable set of infinite elements preceding $\{*\}$ is a *super compact chain*, and that element of the *-chain is *-small.

If there is a bijective isomorphism between every member of the *-chain, and some object at the site of $\mathscr{C}(\mathrm{S})_\bullet$, then it ought to be a genuine isomorphism. This constitutes a foliation by λ_{CUR} of the base space of a retract from an uncountable ordinal to $\{*\}$ through the reduction morphism. The complex of interactions

$$\mathscr{C}(\mathrm{S})_\bullet \leftrightarrow^{\mathbf{HUR}} \{*\}$$

is written by $\widetilde{\Delta}$ and is given an auto-equivalence of p(ol)arity $\{*\}\leftrightarrow\bullet$ We call this equivalence the *Walsh-Hadamard transform*.[5]

This is a function bringing phase spaces to a space with an quasi-isotropic potential, with, in general, anisotropy being generated by the relevant transform. This is *at first* a binary process, but quickly spirals into a process of very large p-arity. This gives to a fixed point in a geometric representation the property that it is the *reducer* of a Witt group of n-potentials.

Example Take the $\mathbb{L}^4$ Minkowski light-cone embedding a 3-potential at the nucleus.

Example 2 A cobordism with a singularity at the zipper is *reduced* to a point "at infinity."

So, for some shaped space $\mathbb{S}$, we have the compactification $\mathbb{S} \rightarrow \mathbf{r}$ on the *transform* (Walsh-Hadamard) manifold.

$$\{\mathbf{St}(\mathbf{X},\mathbf{Y}) \rightrightarrows \mathbb{M}_{\mathrm{ST}}(\mathbf{X},\mathrm{Hom}(\mathbf{Y},\mathscr{U}))_\bullet | \mathbf{X}\sim\mathbb{L}^4,\mathbf{Y}\sim\mathbb{C}_{\mathbb{B}}\},$$

[5] See, [ben]

which is "tame" *at a point*! This point is then known as a θ-adherent point, as the "vector direction" of a codomain of linear, pointed objects "adheres" to some point, $\theta\varepsilon$ in $\mathbb{M}_{ST}(\mathbf{X},\mathrm{Hom}(\mathbf{Y},\mathscr{U}))$, where $\mathbb{M}_{ST}$ is the mapping stack class.

Example 3 The "Hilbert sphere" is a space, $\mathbb{C}_{\Sigma}$, "equipped with" a *reductive* (supercompact) "point at infinity." $\mathbb{C}{:}\mathbb{C} \cup \{\infty\}$

2.3 Miniscule Alcoves with Inertial Subweights

Let a complex $\widetilde{N}$ be a regular Newton polytope, and let it admit flat decomposition into faces. We have, for vertices only connecting to edges on the boundary of the polytope, a number of "alcoves" into which the polytope may be decomposed. Each of these, according to the proportions $sin\theta d\theta\pi ik$, are arranged so as to create analytically continuous shapes, according to a hyperbolic "smoothing" of each neighborhood adjoining a vertex.

According to the GIT (invariant) number of each, we assign a ϕ_θ-link to each extremal point $\mathbf{n}_k$.

$$\phi_\theta : \mathbf{n_k} \rightarrow \widetilde{\Delta}\widetilde{N}$$

According to Mochizuki, the left and right objects are called "mutually alien copies;" they are perhaps a generalization of mutually orthogonal Lie groups.

For a superposition of two such right objects, we have a strong action, and a weak action. The weak may be either top or bottom, and the strong are contrary. We have:

$$sin\theta d\theta\pi ik(\mathbf{1}\text{-}|\mathbf{n_k}|)=\imath,$$

where $|-|$ is the polarity of a polarized hyperbolic vertex. We call each $\imath$ an *inertial subweight* of the Newton polytope.

$$\imath(\mathfrak{F}) \rightrightarrows \mathrm{Hom}(\mathbf{X},\mathrm{Hom}(\mathbf{X},\mathbf{Y})) \simeq \mathfrak{F}_{ex} \simeq \Delta \cup \widetilde{\bullet}$$

We have the formula

$$\imath(\mathrm{Hom}(\mathbf{X},\mathbf{Y})) \simeq \Sigma\phi_\imath$$

for describing how an analytically open set of a Hermitian manifold behaves in correspondence with a set of regular ϕ-displays.

For each inertial sub-weight, s, there is a unique miniscule cocharacter corresponding to the *reducer* of s.

2.3.1 Hom-sets of alcoves

For each generative factor, $\frac{1}{\xi}$, there is an object in the direct sum $\Lambda \oplus \Lambda$ of scenes with real loci. We denote the hom-set between each object associated to a generative factor by Λ, and call Λ an "apartment" (of a Euclidean building).

An apartment, in more modern terminology, is essentially a "sheaf" whose germs are all alcoves. More or less, if there are *m* stalks of Λ, then stalk *m* is called the "closure operator," and is the functor $m{:}\Lambda\rightarrow\overline{\Lambda}$. In my own words, I have called this the "radial completion" of a regular graph.

$$\mathrm{Hom}(\overline{\Lambda},\Lambda) \vdash |\overline{\Lambda}|_r$$

With r the regularity of the graph.

Remark 2.3.2 Map(Hom($\overline{\Lambda}$,Λ)) gives the relevant picture in $\mathbb{M}_{ST}$. A *building* is the higher-order closure $\overline{\overline{\Lambda}}$ of a sheaf.

$$\mathrm{Map}((\mathfrak{F}_{e,r},\mathrm{Hom}(\overline{\Lambda},\Lambda)),(\mathfrak{F})){:}\text{proét}$$

Chapter 3 | The Countryman Line

Let $w{:}p_1\rightarrow p_2$ be a walk between two poles of a compass. Let the compass be such that the universe $\mathfrak{U}(\Omega^{\bullet'}_{\bullet})$ encloses a field of uncountable cardinality. Then, we call *w* the *Countryman line*. This line is a flow-minimizing geodesic from the inf-pole to the sup-pole, or vice versa. It corresponds to a count of the cardinal invariants of a metric space's diagonal.

$$w^2 : (-)_{\mathrm{FIN}} \rightarrow \mathrm{Sets}$$

Warning The map from $(-)_{\mathrm{FIN}}$ does not imply that *w* is countable; only that *w* with right-action obeys the countable chain condition. w is the span of a (possibly imaginary) space.

The countryman line is the union of an infinite number of countable *shaped sets*, in this case, tiles such as alcoves. They are the projections *at the diagonal* of a space generated by its set of bases.

Example Let $S_1\times S_2$ be a fuzzy set of truth values. Then one obtains $\mathbb{R}^2$, which is stratified by the continuous line *w*.

Example 2 Let $\mathscr{S}\backslash s, s\in\mathscr{S}$ be two distinct, complimentary sites. Then, the countryman line forms the projector

$$\mathrm{Proj}_s\rightarrow_{\mathrm{Kolm}}\mathscr{S}_i \times \mathscr{S}_i$$

which relates the sites *as Kolmogorov spaces*.

In our project, countryman lines will take more of a backseat role as we relate them to gerbe bundles. In fact, it is rather easy to construct gerbe bundles which are contortions of countryman lines.

Let *W* be the countryman line. Then, we can couple *W* to the *indigenous bundle* of Gunning, and obtain:

$$W \circ \mathfrak{G}^{-1} = \mathcal{U}_{y_n} \nabla{\otimes}\Sigma_i(\overline{z}_i).$$

To this effect, we have an *indigenous gerbe bundle*.

Let $\mathscr{W}_P$ be the worldline of a traveling parton. Then, by letting $W{=}\mathscr{W}_P$ we obtain a *kink* around the reducer of $\mathbb{M}_{ST}$, which here represents a locally small d-brane. If the kink is non-commutative, then it is an *obstruction* to the flat immersion of $\mathscr{U}_P$ *at the reducer*. This makes fail to be $\mathbb{S}_{Red}$ polystable.

$$\mathscr{U}_P|_{\tilde{\Delta}} \rightarrowtail_{KOLM} \mathbb{S}_{Red}$$

In these cases, the obstruction does not seem to admit a *crepant resolution*. Thus, the tension of a string in the associated Kolmogorov space seems permanently "raised," or suspended. This cannot be resolved at the level of the building, or even apartment, but must be operated upon at the level of the alcove.

$$\mathscr{U}_P|_{\tilde{\Delta}} \simeq \mathbb{C}/\xi^2$$

Here, the Hermitian kernel is stable under a slight modification of the associated harmonic equations.

Proposition 3.0.1 A stable kernel is Hermitian.

The co-kernels of the Hermitian kernels are ortho-regular projectors, and so H-kernels are more special than Kolmogorov kernels. This is because

Proposition 3.0.2 An H-kernel has as its adic brake the suspension morphism $H^{-1} \rightarrow_{-1} K_n$.

Its special fiber has a convolution, WH $\rightarrow K_{n-1}$, where coker(K_{n-1}) is an adically complete ring spectrum. This is the classical Riemann-Hilbert correspondence in dim=2 classical and imaginary dimensions, with a string (as a slice of $\mathbb{R}^2$) exhibiting Minkowski-measurable tension.

Proposition 3.1.0 Let $\mathfrak{F}$ be any infinite field. Then, $\mathfrak{F}/W$ yields the diagonal of $\mathfrak{F}^2$.

Proof It is clear by now that W is the decomposition:

$$W\colon \mathfrak{F}\times\mathfrak{F} \rightarrow \mathfrak{F}_\Delta$$

So, it follows for any field of infinite length, and also for fields of finite length, since they satisfy a weaker condition.

Proposition 3.1.1 If $\mathcal{R}$ is a finite ring spectrum, then W decomposes $\mathcal{R}$ into two locally ringed spaces of finite cardinality.

So, if $\mathbf{L}^{2p}\mathfrak{X} \rightarrow \mathbf{L}^{p}\mathfrak{X}$ is a pair of mutually orthogonal hyperspaces, their "gluing space" would in some sense be W.

Theorem 3.1.2 The centralizer of W, if it exists, is an adic brake.

Proof Let $\mathscr{O}\rightarrow\mathscr{O}$ be a map between mutually orthogonal hyperspaces. If there is some element, whose inertial weight is γ, then we write $\phi_\gamma\colon\mathscr{O}\rightarrow_\gamma\mathscr{O}$. That this is an adic break follows by extending $\phi_\gamma\rightarrow\phi_{\delta\gamma}$ along a trivial bundle gerbe.

One obtains the following diagram:

$$\begin{tikzcd} \phi_\gamma \arrow[rr, "cent"] \arrow[dr, hook] & & \phi_{\delta\gamma} \\ & \mathrm{t} \in \nabla\mathbb{B} \arrow[ur, tail] & \end{tikzcd}$$

Letting $\phi_{\delta\gamma}$ be an earthquake map $\mathbf{Map}(\delta + i,\gamma)$ along the diagonal of a compass. We have

$$\mathbf{Map}_{\mathbf{Fin}}(\phi_{\delta\gamma}) \to \mathbf{Map}_{\mathbf{pro\acute{e}t}}(\widetilde{\mathcal{E}}) \to \ldots \to \Sigma$$

so that the floor poles are successively removed as the chain becomes restricted to a real locus. The top-left and top-right objects are both weakly chained covering maps of spaces. Cent is a bijection between the set of perfect rings representable in each space. $\nabla\mathbb{B} \twoheadrightarrow \phi_{\delta\gamma}$ is an epimorphism which transforms the site-level base space into a sheaf of rings.

3.2 The generative factor and its relationship with *W*

Letting two distinct strata be called *Lie strata* allows us to dualize a building into sections of scalable normal cones. These have a factor of $\geq\varepsilon$ referred to as the *generative factor*, which parameterize the convexity of each unique apartment. The generative factor is reciprocal to the moduli center

$$1/\mathbf{Cent}_x\backslash\mathrm{int}(\mathbf{Cent}_\mathbf{x}\backslash\mathrm{int}(m\mathbf{Cent}_\mathbf{x})) = \mathbf{Cent}^{\heartsuit},$$

for m some arbitrary factor. $\mathbf{Cent}^{\heartsuit}$ prescribes a *flat metric* to a *distance*, which is, in some blurrier sense, tame. *W* can be re-sewn through the miniscule co-characters which $\mathbf{Cent}^{\heartsuit}$ generates.

3.2.1 Smallness of *W*

We let < represent an "inclusion" relation, so that if A<B, then B covers totally A and some space complement to A. Let $\aleph$ be an arbitrary transcendental character, and say $\aleph$-sup(B)>$\aleph$-sup(A). Then, A is *small* within B; it is in fact both A-small and B-small, but it is A_0-small while it is B_1-small. If we have an arbitrarily decreasing set of fields, *ω…C,B,A*, then they are *ringed* spaces whose *centers* are (locally) zero. The "smaller" field is that which bounds the zero element *more tightly*, and thus has a more limited domain of absolute valuations to draw from.

We are philosophically motivated to discuss how "small" the Countryman line is. Arbitrarily, it is W_0-small; but, shall we allow that it is not transcendental over some field, N, then it is $N_{>0}$-small. However, for any compass $\boldsymbol{C}$, we can define a Countryman line whose compass shares the same sup-pole as $\boldsymbol{C}$. Thus, we are motivated to say that W^n itself is a valid sup-pole for any compass.

Proposition 3.2.2 For any *Grothendieck universe*, $\mathfrak{U}$, there is an isomorphism $\mathfrak{U}(-)\leftrightarrow W^n(\mathbb{P})$.

This final statement relies on the equivalence of sup-poles in a compass with the polarity of a weakly Abelian Lie group. We can make a *smooth transfer* (of schemes) between the two and leave having preserved most of the desired generic properties. So,

$$\mathrm{Proj}(\mathbb{M}_{ST}(\mathrm{P}, \mathrm{Y})) \rightarrow W^n(\mathbb{P})$$

gives the desired functor from a bundle gerbe *at a mapping stack* and a geometric space. Here, we make let the left-hand side be a pole encompassing $\mathfrak{U}(-)$, and we write $\Omega_*^{Proj(\mathbb{M}ST(P,Y))}$ to relate the generic universe with a space whose *countryman line* divides it into a stratum consisting of "pure data," and "mapping stack data."

Proposition 3.2.3 $\Omega_*^{Proj(\mathbb{M}ST(P,Y))}(\mathrm{F})$ defines an arbitrary spectral topos with sup(P,Y)=1.

Proof Let $\mathfrak{U}(-)=\mathfrak{U}(\partial\mathbb{B})$ be a weakly chained space, whose finite joins are all simply connected. Then, the underlying lattice is complete. Since the co-zero components of the map

$$\mathfrak{U}(\partial\mathbb{B}) \rightarrow_{\mathrm{coz}} W^n(\mathbb{P})$$

all vanish at a point {*}, we set that to be our inf-pole. We use this result to briefly make the statement that all automorphisms $\mathfrak{U}(\partial\mathbb{B}) \rightarrow \mathfrak{U}(\partial\mathbb{B})$ are cohomologically affine.

Proposition 3.2.4 For an alcove, a, and a space K, the alcove is K_3-small.

Proof By counting the chain $a \subset$ apartments $\subset$ building $\subset$ K, one obtains this result.

Proposition 3.3.1 Every building is a geodesic lamination of $\mathbb{P}^n \backslash W$.

Proof We let r_k be an underring of W. An earthquake $\widetilde{\boldsymbol{\mathcal{E}}}$: $\mathrm{r_k} \rightarrow \mathrm{r_{k-n}}$ acts via torsion on $\mathbb{P}^n$. Thus, for every representable Lie group $\mathfrak{g}$, there is an action $\lambda\widetilde{\boldsymbol{\mathcal{E}}}$. Integrating $\int_W \lambda\widetilde{\boldsymbol{\mathcal{E}}}$ gives us a foliation of the projective space, where every point in W corresponds to a bounded neighborhood of truth values.

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