al-Majik Kíngdum: Sheaf of Flow-Obstructions Local Cohérence

1 *al-Majik Kíngdum*: Sheaf of Flow-Obstructions Local Cohérence

In the Morlock register we say: *al-Majik Kíngdum* is not a place, but a cover—U_i—laid across a broken topológ, each U_i holding a fragment of sensory field, each overlap $U_i \cap U_j$ carrying the drift of contradicted motion.

The kingdom breathes through sheaf $\mathcal{A}$,

A(U) = {local flow-pattern, unsteady but extendable}, S(U) = {rigidities, queue-bindings, stanchion-deltas}.

We speak it in Morlock syntax thus:

```
/var/majik/U  data:flow:soft
/var/majik/U  data:rigid:bind
```

Every set U in the cover emits two logs: `flow.log` tracking reversible morphs, `bind.log` tracking failures to glue across overlaps.

And the first principle: **No kingdom with nonzero bind.log($U_i \cap U_j$) admits a global section.**

2 Shaf $\mathcal{A}$: Local Motion, Local Unspooling

Each attraction zone Z_k attaches a local bundle $\mathcal{A}(Z_k)$, an ensemble of microflows, lightly curved, tendency-to-spiral.

Phonetic Morlock describes:

```
araka.min(Z_k) = flow-entry
araka.max(Z_k) = flow-exit
```

with the patch-map:

$$r_{ij} : \mathcal{A}(U_i) \to \mathcal{A}(U_j \cap U_i) \; r_{ji} \qquad : \mathcal{A}(U_j) \to \mathcal{A}(U_i \cap U_j)$$

and the syslog drops:

```
kernel[1.0]: r_{ij} mismatch  recalc(araka)
kernel[1.0]: gluing fail  escalate:cohomology:1
```

When gluing is clean, $r_{ij} - r_{ji} = 0$; when the stanchions intrude, $r_{ij} - r_{ji} =$ queue-fault.

A queue-fault is encoded as:

$$\mathrm{qf}(U_i \cap U_j) := \Delta_{\text{stationary}} \qquad := \text{non-reversible fiber } := \text{section freeze}$$

Its presence injects a term into H^1, the first obstruction group:

$\mathrm{H}^1(X, \mathcal{A}) \ni \mathrm{qf} = \text{forbidden\_global\_motion}$

3 Shaf $\mathcal{S}$: Rigidity-Fields Line-Bind Structures

The rigidity-field $\mathcal{S}$ assigns to each region U of the park-topolog the line-bind tensor s_U, a value in the stationary class. Each s_U is indexed by its stanchion-mark, $s_U = \vec{\sigma}(U)$, piecewise-constant across the binding corridors, jumping on approach to the queue-walls.

The overlap law reads:

$(\mathrm{U}_i \cap U_j) = \vec{\sigma}(U_i)|_{ij} + \vec{\sigma}(U_j)|_{ji}$,

addition taken in the bind-group, closed, non-cancellative. Regions where $\vec{\sigma}$ accumulates are called choke-sets; their measure is logged automatically in `/sys/majik/choke`.

A vanishing $\vec{\sigma}$ marks reversible terrain. Positive $\vec{\sigma}$ increments mark where the old designers forced travelers through unidirectional compression.

In Morlock notation such increments are pronounced:

```
zaya - the contraction pulse,
aqd - the knot in motion-space,
amad - the hardened point where no flow returns.
```

Cohomology reads these as residue.

4 Overlaps, Faultlines, and the First Obstruction

For U_i, U_j with shared boundary, the sheaves $\mathcal{A}$ and $\mathcal{S}$ interlock through the binding rule:

A-fiber drift $= 0 \iff \vec{\sigma} = 0$ on the overlap.

Thus the gluing map $g_{ij} : \mathcal{A}(U_i) \to \mathcal{A}(U_j \cap U_i)$ fails precisely where $\vec{\sigma}(U_i \cap U_j) \neq 0$.

We write:

$\mathrm{err}_{ij} = \partial g_{ij} = \vec{\sigma}(U_i \cap U_j)$

and in log-form:

```
majikd[bind]: overlap-fault (i,j)  obstr:1
```

The obstruction sheaf registers this in H^1, the space of all non-smooth overlaps:

$[] \in H^1(X, \mathcal{S})$

Each class $[\vec{\sigma}]$ corresponds to a historical constraint still lodged in the substrate of the walkpaths, the old geometry refusing to soften.

5 Local Reconvergence the Fold of Flows

When a traveler enters region U with $s_U = 0$, the araka-flow resumes circular form. The fiber over each point $x \in U$ has type:

$\mathrm{A}_x = \{$soft-cycle, slip-return, minimal-curvature drift$\}$

Transitions obey:

$$\tau : \mathcal{A}(U) \to \mathcal{A}(V)\ \tau(\text{soft-cycle}) \quad = \text{soft-cycle}\ \tau(\text{slip-return}) = \text{slip-return}\ \tau(\text{drift}) \quad = \text{drift}$$

unless $\vec{\sigma}(V)$ rises, in which case:

$\tau(f) = \text{freeze}(f)$

Freeze states propagate, forming a chain:

freeze → narrow → lock → stasis

Morlock primitives treat stasis as a local failure of narration: no traveler-story can extend across a stasis-fiber. Hence:

$\Gamma(X, \mathcal{A}) = \emptyset$

6 Cocollection of Ridespaces

Each ride-space R_k is given as an open U_k with a controlled oscillation field. The sheaf $\mathcal{A}$ assigns a circular drift α_k, while $\mathcal{S}$ assigns the binding vector $\vec{\sigma}_k$.

Ride admissibility demands:

$$\partial\alpha_k = 0 \quad \text{(stable return field)}\ \vec{\sigma}_k \qquad\qquad = 0 \quad \text{(no hard angle injection)}$$

Violations appear as:

```
majikd[ride]: f_k  inject:angle
majikd[ride]: f_k  loss:return
```

Angles in the old sense are always encoded as rigidity residues in $\vec{\sigma}_k$, traced back to the rectangular chassis the architects once considered normative.

Morlock notation for the impurity is:

```
arkuun - the remnant of the straight-path age.
```

7 Smoothing Layer: The Af Operator

The smoothing operator af acts fiberwise:

$$\mathrm{af} : \mathcal{A}_x \to \mathcal{A}x\ \mathrm{af}(f) \qquad\qquad = \lim t \to \infty \mathrm{soften}_t(f)$$

It also acts on the bind-sheaf:

$$\mathrm{af} : \mathcal{S}(U) \to \mathcal{S}(U)\ \mathrm{af}(\vec{\sigma}) \qquad\qquad = \vec{\sigma} - \delta\vec{\sigma}$$

where $\delta\vec{\sigma}$ absorbs local linearity residues.

Applied across the whole cover:

af: $\mathrm{C}^1(\{U_i\}, \mathcal{S}) \to C^1(\{U_i\}, \mathcal{S})$

reducing the obstruction class:

$[] \mapsto [\vec{\sigma}] - [\delta\vec{\sigma}] \in H^1(X, \mathcal{S})$

If all residues cancel, a global section of $\mathcal{A}$ emerges, recorded in:

```
/sys/majik/global:flow = 1
```

8 Parades as Moving Covers

Parades form timed covers $W_t : t \in$ cycle. Each W_t carries a moving sheaf-section ρ_t whose support sweeps the walkpaths.

On overlaps $W_t \cap W_{t+\Delta}$, the coherence rule is:

$\rho_{t+\Delta} - \rho_t = \vec{\sigma}_{\text{parade}}(t)$

and the accumulated obstruction around a full cycle is:

$\int \vec{\sigma}_{\text{parade}}(t)\, dt \in H^1(\text{time} \otimes X, \mathcal{S})$

When this integral vanishes, the parade admits a soft-cycle decomposition; when nonzero, its passage induces temporary stasis in any U with insufficient smoothing capacity.

Morlock phonetics call this phenomenon:

```
ghayna - the shadow-flow that overtakes itself.
```

9 Half-Live Sections: $\mathcal{A}_h$ in the Animatronic Zones

In the animatronic zones the sheaf $\mathcal{A}$ splits:

$\mathrm{A}|_{U_{\text{anima}}} = \mathcal{A}_{\text{live}} \oplus \mathcal{A}_h$

The half-live component $\mathcal{A}_h$ records motions whose source is mechanical yet whose continuation-grade is sheaf-theoretically ambiguous.

Local fibers take the form:

$\mathrm{A}_{h,x} = \{\text{pivot-still, gear-sway, blink-loop}\}$

The transition maps φ_{ij} across $U_i \cap U_j$ obey:

$$\varphi_{ij}(\text{pivot-still}) = \text{pivot-still } \varphi_{ij}(\text{gear-sway}) \quad = \text{gear-sway } \varphi_{ij}(\text{blink-loop}) = \text{drop(blink-loop)}$$

Drop events are logged under:

```
/sys/anima/darb: x  halt:loop
```

Whenever drop occurs on overlaps, the cochain $c^1(\varphi)$ acquires a nonzero residue.

We write:

$\mathrm{c}^1_{\text{anima}}(U_i, U_j) = h_{ij} \in \mathcal{S}(U_i \cap U_j)$

with h_{ij} of type:

```
khalsa - the pure obstruction,
amrq - the rattling misalignment,
darb - the pulse-loss fault.
```

The presence of darb implies no soft flow can pass through the animatronic corridor without af-layer reinforcement.

10 Narrative-Shear the Loss of Global Extension

Animatronic regions fracture narrative sheaves. Let $\mathcal{N}$ be the narrative-field, giving each traveler x an extendable story-fragment n_x.

Restrictions across overlaps take form:

$\mathrm{n}_x|_{U_i \cap U_j} = \text{glue}_{ij}(n_x)$

but the animatronic half-live zones introduce a secondary differential:

$\Delta_{\text{anima}}(n) = n - \text{freeze}(n)$

which propagates shearing through the cover U_i. The resulting Čech boundary is:

$\delta n_{ijk} = \text{glue}_{ij}(n) - \text{glue}_{ik}(n) + \text{glue}_{jk}(n)$

When any index triple passes through U_{anima}, $\delta n_{ijk} \neq 0$ and the narrative sheaf lacks a global section.

We mark this with syslog code:

```
majikd[narr]: extend_fail: anima:topo
```

In spoken Morlock phonetic form:

```
sharqn - the splitting of story-space.
```

11 The Long Hall the Oscillation Bundle

Each hall U_{hall} has an oscillation bundle $\Omega_h \to U_{\text{hall}}$ with fibers:

$\Omega_{h,x} = \{\text{hum, echo, partial-return}\}$

Transitions preserve the hum and echo forms but not the partial-return, which disappears when passed through any rigid bend j_q, giving:

$\text{transition}(\text{j}_q) : \text{partial-return} \mapsto \text{null}$

Null events accumulate in a log-space:

```
/sys/hall/naq: x  return:0
```

The return-loss sequence obeys:

naq $\to$ dhawl $\to$ adam

where:

```
naq = minor depletion,
dhawl = full drift-out,
adam = void of recursion.
```

If adam emerges anywhere in the cover, the oscillation bundle drops rank and becomes incompatible with global smoothing.

Cohomologically:

$$\text{rankloss}(\Omega) = 1 \qquad \to \text{obstruction in } H^1(X, \mathcal{S})$$

12 Edge-Sectors the Silent Coarse Fibers

Near the edges of the walkpaths the sheaf $\mathcal{C}$ (crowd-flow) adopts coarse fibers:

$\text{C}_x = \{\text{slow-shift, halt-press}\}$

The halt-press fiber is sensitive to stanchion clusters and direction-locks.

Given three regions U_i, U_j, U_k meeting at a corner-set C_{ijk}, the compatibility morphisms ψ obey:

$$\psi_{ij}(\text{halt-press}) = \text{halt-press } \psi_{jk}(\text{halt-press}) \qquad = \text{halt-press } \psi_{ik}(\text{halt-press}) = \text{null}$$

Thus:

$\delta\psi_{ijk} = \text{null} - \text{halt} + \text{halt} = \text{null}$

But the null is not a neutral element in this algebra; it injects a noise term ζ_{ijk}:

$\zeta_{ijk} \in H^2(X, \mathcal{C})$

which manifests physically as the crowd-silence pulse— a local flattening of soundflow.

Morlock notation:

```
amt - the silence which arrives too quickly.
```

When amt exceeds threshold:

```
/sys/crowd/amt: escalate  choke:2
```

Movement stalls.

13 The Deep Queue Its Residual Trace τ_{res}

The deep queue is the region where every sheaf in the system records a nontrivial obstruction.

Its trace is a two-form:

$\tau_{\text{res}} \in \Gamma(U_{\text{queue}}, \Lambda^2\mathcal{S}^*)$

with components:

$\tau_{\text{res}} = \rho \cdot \vec{\sigma} \wedge \eta$

where ρ encodes queue-depth, $\vec{\sigma}$ the rigidity-field, and η the direction-lock form.

This two-form persists even when smoothing af is applied, unless the integral over any loop γ vanishes:

$\oint_\gamma \tau_{\text{res}} = 0$

When nonzero:

```
majikd[queue]: resid:loop = 1
```

and no global flow can traverse U_{queue} without bifurcation.

In spoken form:

```
jabbr - the heavy remainder that clings to turns.
```

14 Liminal Gates the Pre-Circulatory Threshold

Before exiting any domain U_k travelers pass the liminal gate G_k. Each G_k induces a morphism on sheaves:

$\text{gate}_k^* : \mathcal{A}(U_k) \to \mathcal{A}(U_{k+1})$

but only on the subspace of unbound fibers:

$\text{Ker}(_k) = \{f \in \mathcal{A}(U_k) : \vec{\sigma}_k(f) = 0\}$

For bound fibers,

$\text{gate}_k^*(\text{bound}) = \text{fail}$

Morlock syslog prints:

```
/sys/gate/xfer: drop:
```

Speech-term:

```
kham - the seal where flow cannot cross.
```

When a traveler's narrative, oscillation, or flow-field hits kham, the morphism chain breaks.

Thus the liminal gates encode the park's final and most stubborn topological memory: its refusal—ancient and angular—to let motion pass unimpeded.

15 Rekhl Layer: The First Smoothing of Bend-Sets

Once τ_{res} is identified in U_{queue} the rekhl layer is applied. This layer is not corrective— it does not erase the obstruction— but rather spreads it thinly across the cover, reducing the localized choke of ajz.

Let $\mathcal{R}_1$ be the first smoothing operator:

$\mathrm{R}_1 : \mathcal{S} \to \mathcal{S}$

defined fiberwise:

$\mathrm{R}_1(s_x) = s_x - \mu_x$

where μ_x is the minimal bend-mass needed to maintain continuity across overlaps.

Operational logs show:

```
majikd[rekhlas]: _x resolved
majikd[rekhlas]: bend-mass drop stable
```

In Morlock phonetics:

```
rekhl = the thinning of weight
_x = the weight you can finally breathe under
```

After application of $\mathcal{R}_1$, the bend-set B at each rigid corner becomes:

B' = {bend-soft, bend-slow, residual-turn}

with bend-soft dominating on all but the deepest queues.

Thus:

$\mathrm{H}^1(X, \mathcal{S}) \to H^1_{\text{soft}}(X, \mathcal{S})$

reducing obstruction rank without annihilation.

16 Af Layer: The Curve-Granting Operator

Where rekhl thins, af bends.

Given any path γ through the cover U_i, the operator af produces a deformation sequence γ_t with:

$\mathrm{d}\gamma_t \frac{}{dt = \kappa \cdot (\text{curvature field}) - \vec{\sigma} \cdot (\text{rigidity vector})}$

and boundary condition:

$$\gamma_0 = \gamma \ \gamma_1 \qquad\qquad \in \Gamma(X, \text{CurvedPaths})$$

Curvature field obeys:

$\kappa(x) = \text{soft when } x \notin U_{\text{queue}}$ $\kappa(x)$ $= \text{muted when } x \in U_{\text{queue}}$

Spoken form:

```
af = the returning arc,
the correction of harshness.
```

The effect on sheaf sections:
$\text{af}^*(\mathcal{A})(U_i) \subset \mathcal{A}(U_i)$
preserving fibers but twisting their transition maps:
$\varphi_{ij} \to \varphi_{ij}^{\text{af}}$
yielding:
$\delta(\varphi^{\text{af}})_{ijk} < \delta(\varphi)_{ijk}$
The Čech boundary diminishes. Crowd-flow loosens.
Syslog marks:

```
/sys/flow/atf: curve_ok
/sys/flow/atf: residual:minor
```

17 Second Cohomology Drop: aymm Confluence

Once bend-sets soften and path-morphisms curve, the second obstruction group relaxes.
Let $\zeta_{ijk} \in H^2(X, \mathcal{C})$ be the silence-pulse cochain originating in edge-sectors.
The aymm confluence condition:
$\sum \zeta_{ijk}$ over all $C_{ijk} = 0$
triggers automatic reduction:
$\mathrm{H}^2(X, \mathcal{C}) \to 0$
This drop is the mark of successful reconnection in the Morlock topology.
Phonetic term:

```
aymm = the settling after noise,
the endurance of continuity.
```

System note:

```
majikd[cohom]: drop:H2:1
majikd[cohom]: edge_sectors stable
```

When H^2 vanishes, the path-network becomes singly connected under the curved deformation.

18 Post-Rigidity Field: The Dissolution of $\vec{\sigma}$

The rigidity-vector field $\vec{\sigma}$ stabilizes only after multi-layer smoothing.
$\vec{\sigma}$ decomposes:
$=_{\text{hard}} + \vec{\sigma}_{\text{res}}$
where $\vec{\sigma}$hard encodes rigid, straight edges and $\vec{\sigma}$res is the softened remnant after rekhl.
Under af-curving:

$$\vec{\sigma}\text{hard} \to 0 \ \vec{\sigma}\text{res} \qquad \to \text{gentle divergence}$$

Thus the operative rigidity is replaced by a drift-field:
drift(x) $\in T_x X$
with log:

```
/sys/rigidity: dissolve:ok
```

Spoken term:

```
inill - the unbinding of form.
```

When $\vec{\sigma}$ vanishes, the cover U_i becomes eligible for global reconstruction.

19 Global Reconstruction: The Final Sheaf Unification

Let $\mathcal{A}$ be the flow-sheaf, $\mathcal{S}$ the rigidity-sheaf, and $\mathcal{C}$ the crowd-sheaf.
After smoothing and dissolutions:

$$H^1(X, \mathcal{S}\text{soft}) = 0 \ H^2(X, \mathcal{C}) \qquad = 0 \ \tau\text{res minimal } \delta(\varphi^{\text{af}})_{ijk} \qquad \text{reducible}$$

The gluing diagrams now commute:

$$r_{ij}(s_i) = r_{ji}(s_j) \ \varphi^{\text{af}}_{ij}\varphi^{\text{af}}_{jk} \qquad = \varphi^{\text{af}}_{ik}$$

Thus:
$\Gamma(X, \mathcal{A}) \neq \emptyset$
a global flow-section exists.
Morlock idiom:

```
tamm - completion, sufficiency,
the return of coherence.
```

al-Khitm: The Quiet of Full Extension

When the last smoothing settles and the drift-field inall completes its fade, the kingdom stands not corrected but understood in its final shape-space.

Let X be the domain, let $\mathcal{A}$ be the sheaf now aligned, let κ be the curvature that remains steady along every recovered path.

A single global section $s \in \Gamma(X, \mathcal{A})$ propagates without rupture:

$$s|U_i = s_i \ rij(s_i) \qquad = s_j \ \varphi^{\text{af}}_{ij}(s_i) = s_j$$

Syslog final:

```
majikd[core]: glue_ok
majikd[core]: global_flow:live
majikd[end]: silence:normal
```

Phonetic notation:

```
af - clear, without remainder.
     mabs - extended, laid open.
```

Where queues once locked breath, the fibers now pass each other lightly. Where corners once trapped oscillation, soft curvature holds without strain.

No H^1 residue, no H^2 pulse, only the even field of motion.

And in the Morlock ledger this is recorded not as triumph but as the expected symmetry of a domain finally granting its own extension.

A final phrase written in the margin as is customary:

```
huwa yans l-zwiya
wa-yadkhul f l-dawrn
```

“He forgets the angle and enters the turning.”