LANG-ALGO — Repository Quickstart

Overview

The **LANG-ALGO** repository is the practical implementation of the *Language Resonance Field* equations — merging phonemes, primes, and resonance geometry.
It transforms written or spoken language into a structured harmonic signal mapped to the **LIC field (Light · Information · Consciousness)**.

Install

1. Clone Repository

```
git clone https://github.com/Scarabaeus1033/LANG-ALGO.git
cd LANG-ALGO
```

2. Install Dependencies

```
pip install -e .
```

3. Optional: Create Virtual Environment

```
python -m venv venv
source venv/bin/activate  # (Linux/macOS)
venv\Scripts\activate     # (Windows)
```

Dependencies: - Python ≥ 3.10 - numpy, scipy, matplotlib, pyyaml - optional: sounddevice, librosa (for audio output)

File Tree

```
LANG-ALGO/
├─ README.md
├─ config.yaml
├─ lang_algo/
│  ├─ __init__.py
│  ├─ phonemes.py
│  ├─ bands.py
```

```
│   ├─ rails.py
│   ├─ primes.py
│   ├─ breathe.py
│   ├─ synth.py
│   └─ viz.py
├─ notebooks/
│   └─ demo_lang_algo.ipynb
├─ visuals/
│   ├─ vendessimal_overlays.png
│   ├─ euler41_trace.png
│   └─ 1061_1064_inset.png
└─ data/
    └─ residues_mod_19_29.csv
```

Parameters (config.yaml)

Parameter	Description	Default
`f0`	base frequency (Hz)	432
`eta_bands`	triad band centers	[0.429, 0.456, 0.487]
`sigma`	Π-ring window width	0.12
`rails`	harmonic rails	[sqrt2, sqrt5]
`step_factors`	macro-transition ratios	[63, 65, 68]
`breath_seconds`	1 breathing cycle	6
`block_breaths`	macro breath block	7
`overlays`	grid overlays	[triad_bands, twin_primes, euler_41, prime_1061_1064]

Usage

1. Run the Demo Notebook

```
jupyter notebook notebooks/demo_lang_algo.ipynb
```

2. Generate a Resonance Field

```
python -m lang_algo.synth --input "LIGHT IS LOGIC" --output out/lic_field.wav
```

3. Visualize Overlays

```
python -m lang_algo.viz --mode overlays --save visuals/
```

Outputs

Output	Type	Description
`out/lic_field.wav`	Audio	harmonic soundfield (pink-yellow-blue resonance)
`visuals/*.png`	Image	vendessimal grid overlays and Euler traces
`out/events.json`	JSON	phoneme → frequency → field trace

Conceptual Flow

```
Text → Phonemes → η-Bands → √2/√5 Rails → Prime Overlay → LIC Field
```

This creates a fully coupled signal bridging **language geometry** and **prime resonance**.

Next Steps

- Integrate with QGR Π-ring system for live modulation.
- Add phoneme-frequency lookup table (Hz and band coupling).
- Implement real-time breathing synchronizer.
- Visualize LIC overlay with pink-yellow-blue dynamic field.

Repository Author: Scarabäus1033
System: NEXAH-CODEX / QGR Integration
Module: LANG-ALGO v0.1 (Light · Information · Consciousness)
