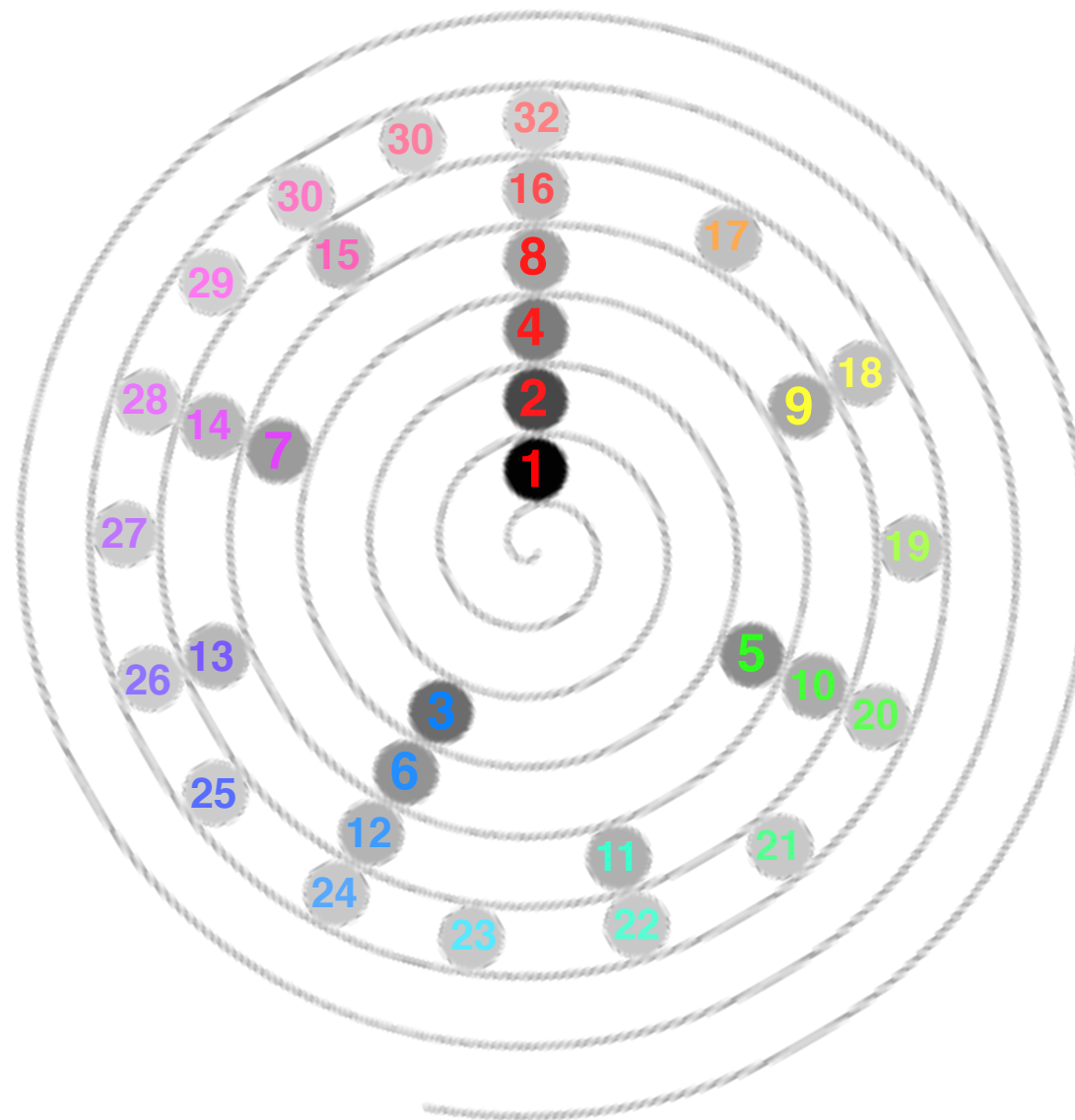# WAVELET SCATTERING ALONG THE PITCH SPIRAL

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How to capture

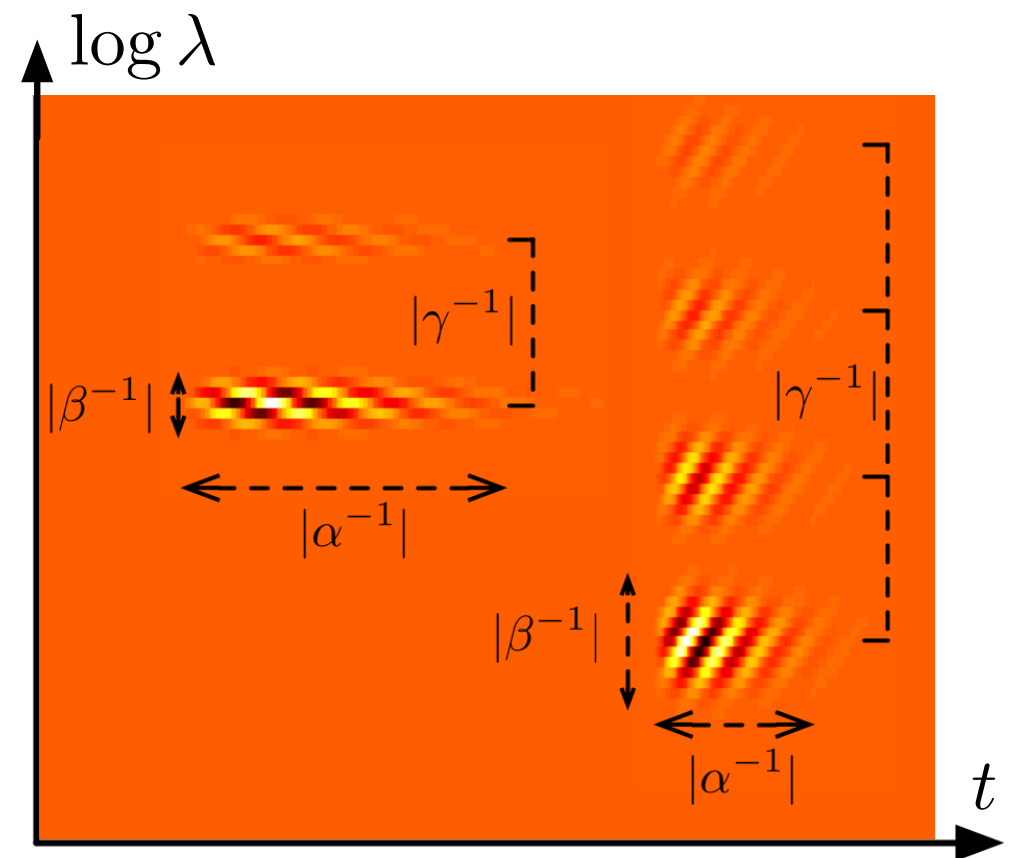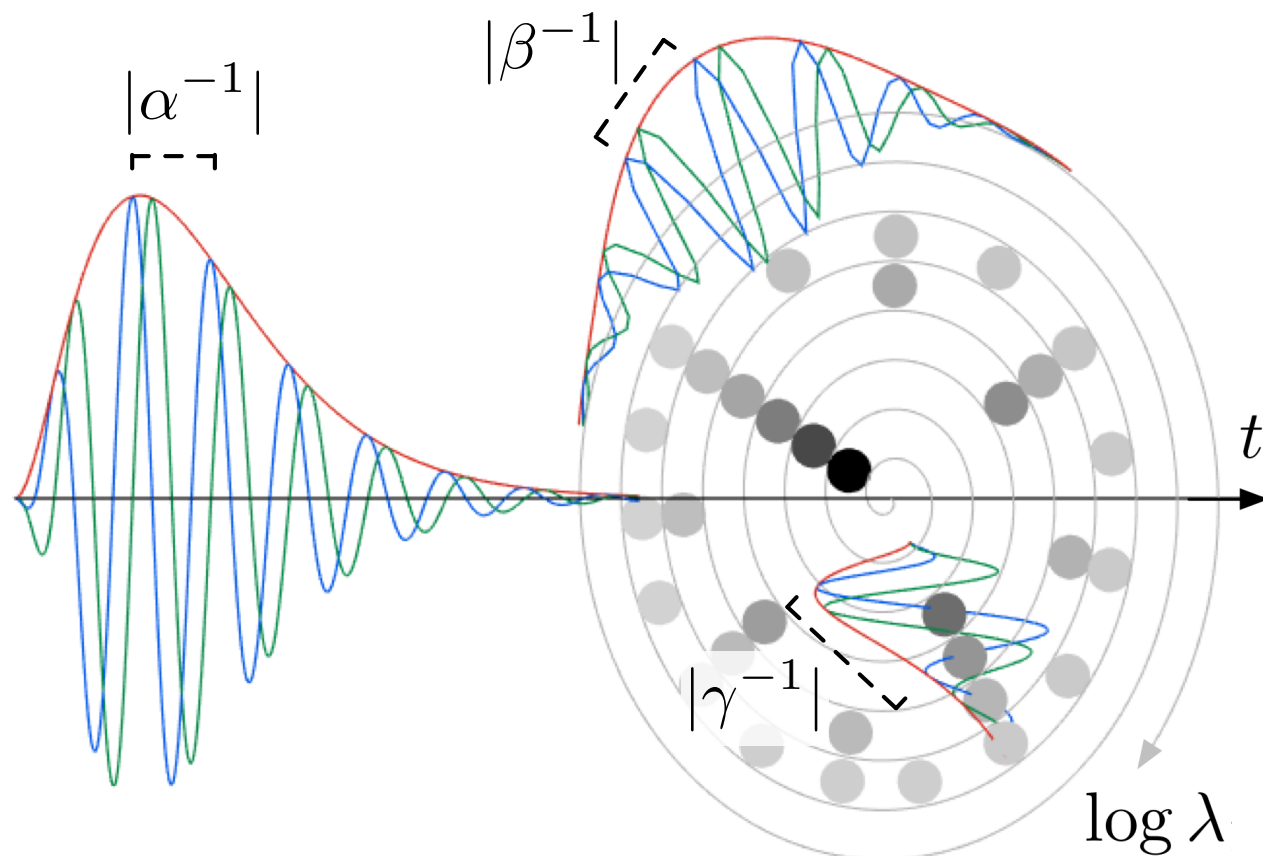(α) **intermittency**

(β) **chirps**

(γ) **harmonic combs**

in a constant-Q wavelet scalogram?

💡 Use a cascade of wavelet convolutions (scattering)

$\log \lambda$

$|\gamma^{-1}|$

$|\beta^{-1}|$

$|\gamma^{-1}|$

$|\alpha^{-1}|$

$|\beta^{-1}|$

$|\gamma^{-1}|$

$|\alpha^{-1}|$

t

$|\alpha^{-1}|$

$|\beta^{-1}|$

$|\gamma^{-1}|$

t

$\log \lambda$

Contributions:
- spiral scattering definition

- nonstationary source-filter

- signal reconstruction from time-averaged coefficients

- towards unsupervised learning of musical timbre