EM_additive~

EM_additive~ is an additive synthesizer abstraction for Pure Data. The abstraction has the following inlets:

1. The fundamental frequency (0-20,000 Hz).
2. The number of harmonics (1-50), which can be dynamically modulated by an external LFO. The signal is anti-aliased by removing harmonics above the Nyquist limit.
3. The relative amplitude of even harmonics.
4. The relative amplitude of odd harmonics.
5. The “component exponent” parameter where the relative amplitude of each harmonic is defined as 1/pow(harmonic number, comp_exponent).
6. The “deviation” parameter, which applies a frequency offset to each harmonic.
7. The behavior of parameter 2 (the number of harmonics):
    - 0: low-pass filter style.
    - 1: high-pass filter style.
    - 2: random - randomly picks priorities for harmonics. The harmonic allocation can be updated by sending a bang to inlet 8.
8. The reset bang for the harmonic allocation and frequency offset.