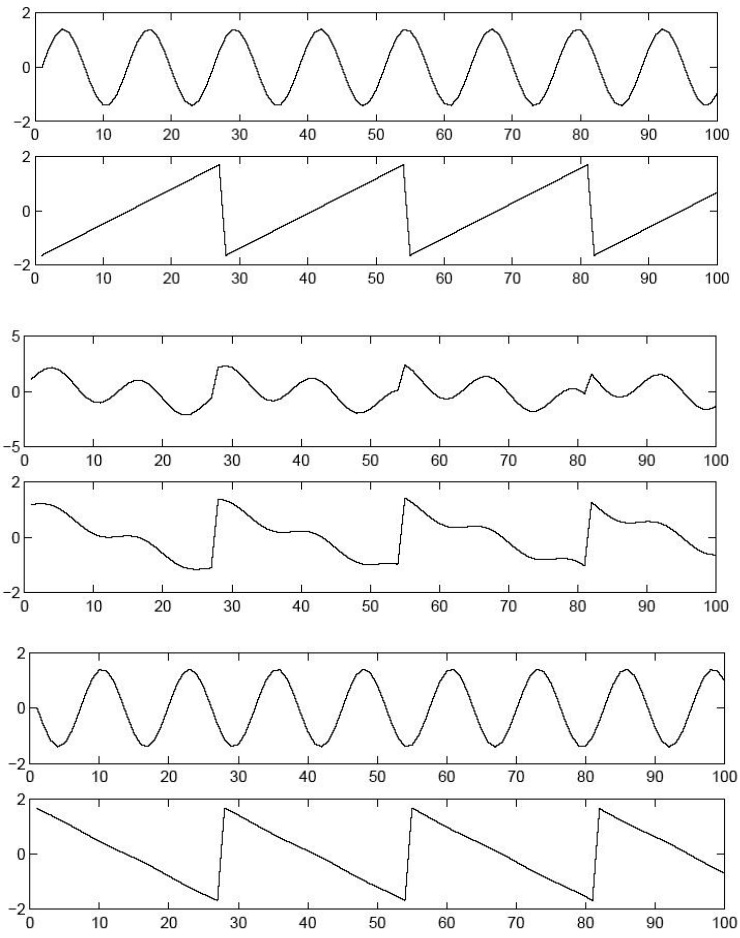
Independent component analysis ICA

- A simple case: two speakers emitting signals s_i in the room, and two microphones x_i:

$$x_1(t) = a_{11}s_1 + a_{12}s_2$$
$$x_2(t) = a_{21}s_1 + a_{22}s_2$$

- We want to separate the signals, but we know them neither the a_i*'s.* We only know they are mutually independent (and we assume non-gaussian)
- ICA finds them


2
0
−2
0 10 20 30 40 50 60 70 80 90 100
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0 10 20 30 40 50 60 70 80 90 100
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0 10 20 30 40 50 60 70 80 90 100

- See a demo

- http://www.cis.hut.fi/projects/ica/cocktail/cocktail_en.cgi