Evaluation measures

The evaluation will be done by organizers, who are given the true images of sources, using matlab code `siseceval.m` (also available to the participants).

For each separating filter, Signal-to-Interference Ratio (SIR) and Signal-to-Distortion Ratio (SDR) will be computed. [D. Schobben, K. Torkkola and P. Smaragdis, "Evaluation of blind signal separation methods," *ICA '99*, Aussois, France, pp. 261-266, Jan. 1999].

For any estimated signal y, considering the j-th source s_j for the target signal, the criteria are defined as

$$\mathrm{SIR_j} = 10 \cdot \log_{10}\left(\frac{\mathrm{E}[y_{s_j}^2(t)]}{\mathrm{E}[\sum_{\mathrm{i}\neq\mathrm{j}} y_{s_i}^2(t)]} \right),$$

$$\mathrm{SDR_j} = \max_{\tau,\mathrm{i}} \; 10 \cdot \log_{10}\left(\frac{\mathrm{E}[x_{i,s_j}^2(t)]}{\mathrm{E}[(x_{i,s_j}(t) - \alpha y(t-\tau))^2]} \right),$$

where y_{s_j} denotes the contribution of the j-th source to y (i.e., when only s_j is active), x_{i,s_j} is the microphone response (image) of s_j at the i-th microphone, and $\alpha = \sqrt{E[x_{i,s_j}{}^2]/E[y^2]}$.

In case that the algorithm computes both microphone responses (images) of sources, each criterion will be averaged over these responses. The global permutation is resolved according to the maximal achieved SIR (see `siseceval.m` for details).