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Modeling within-channel and across-channel cues in comodulation masking release (CMR)

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Experiments and model calculations were performed to study the influence of within-channel and across-channel cues in comodulation masking release (CMR). A single-peripheral-channel modulation-filterbank model [Dau et al., J. Acoust. Soc. Am. 102, 2892-2905 (1997)] was employed to quantitatively predict the within-channel cue in CMR experiments. It is shown that the whole CMR effect in CMR experiments with a single bandpass noise masker with variable bandwidth centred at the signal frequency can be contributed to a within-channel cue. The CMR effect in experiments with a narrow-band masker at the signal frequency and one (or more) flanking band(s) spectrally apart, can be predicted for flanking bands close to the on-frequency band, but an across-channel process has to be assumed for large spectral distances. A modification of the modulation-filterbank model is proposed that can account for the across-channel contribution in CMR.