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Frequency domain approach for improvement of cochlear implant performance[1] SILVIA ROBERT, SANICHIRO YOSHIDA, Southeastern Louisiana University — A cochlear implant is a neuro-prosthesis that converts sound to an electrical signal that stimulates the auditory nerve. Although commercial systems are available, the technology has room for improvement for better sound quality. The challenge is to allocate the frequency spectral components properly to the limited number of electrodes and generate pulsed signals accordingly. We view the entire process as a sensing-actuation system consisting of a series of transfer functions and try to improve the performance by adjusting various parameters such as those for digital filtering and electric current steering. Recent progress will be reported.

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