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Instrumental Assessment of Perceived Near-end Speech Quality

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Communication in noisy situations may be extremely stressful for the person located at the near-end side. Since the background noise originates from their natural environment, it cannot be reduced for the listener. Thus, the only possibility to improve this scenario by means of digital signal processing is the insertion of speech enhancement algorithms in the receiving terminal.

In previous work, a large auditory database was presented for evaluating the trade-off between speech quality and listening effort, which is correlated with speech intelligibility. A balance between speech quality and listening effort is desirable from the user's point of view.

While recent developments already indicate that the instrumental assessment of listening effort is possible, quality aspects have not yet been considered. Common quality assessment methods are not applicable in the given acoustic scenario since they are not designed for near-end speech enhancement and thus do not give reliable results for these approaches.

This contribution presents possible approaches and results for the instrumental assessment of perceived near-end speech quality in noisy scenarios. The previously described auditory database is used for the evaluation of the proposed solution.

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