

Preface

This book presents a new approach to examine the perceived quality of audiovisual sequences. Standard subjective quality tests record a subjective quality judgment in order to draw conclusions about the user's quality perception. It remains unclear how exactly this judgment is formed within the test participant, and what might be the physiologically-based implications when exposed to lower quality media. Therefore, electroencephalography (EEG) is used to address these issues within this work.

First, a series of studies using short (audio)visual recordings of a human head uttering a syllable were conducted. Here, short-term reactions within the EEG are examined, using event-related potentials (ERP). It was shown that when perceiving short video snippets, a neural reaction is observed. The recorded ERP was different for different intensities of stimulus degradation. Subsequently, it was examined how quality degradations affect the mental state of participants when they are exposed to longer lasting sequences of low-quality stimuli. Here, commercially available documentaries were used, where the mental state is affected when watching low-quality videos. Both results are integrated into a well-known model of the quality formation process, such that points of measurement are identified, and implications which result from the observations during this work are integrated into the model.

Finally, the experimental paradigms to use EEG in the area of quality assessment were redefined such that they suit better the requirements of standard subjective quality testings. Therefore, experimental protocols and stimuli have been adjusted accordingly.

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