

ACOUSTICS2008/10 Perceptive temporal features of train passbys

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This work is dealing with characterization of temporal features linked to train passages which may act upon annoyance. Two varying parameters in the recordings have been selected: distance from the railway (7.5 meters, 50 and 100 meters) and train category (four types of French trains). A first series of psychoacoustic tests are carried out in order to mainly extract temporal aspects which could be important for sound perception. To avoid the level saliency, a preliminary equalization has been made on L_{A5} . The selection of perceptive factors is carried out through a multidimensional analysis (INDSCAL). Dissimilarity tests highlight several dimensions: train category, slope of the level increase linked to train arrival and passage length. In addition to the dissimilarity between two stimuli estimation, subjects have to choose the one they prefer and to explain their answers. The verbalization task helps illustrating multidimensional analysis axis. A second series of tests, designed with recordings varying on two independent parameters (the level and the slope of the temporal evolution) makes it possible to compare perceptive variations on temporal effects to loudness.