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Head and torso simulators for acoustic measurements

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Head and Torso simulators which reproduce the acoustical effect of a median human adult, including diffraction and direction-dependent transformation from free field to the ear drum as well as allow for objective testing of sound systems involving hearing aids, headphones, earphones, telephones, mobile phones, headsets and sound quality type of measurements may be realized based on different philosophies. It may be based on geometrically simplified shape or mean values of individuals. The geometrically simplified shape will appear like no human being. The mean values may result in non human like features, while average anthropometric dimensions of an adult human may offer data closer to a subjective test. Especially the shape of the pinna may often be critical to test of earphones and headphones as well as mobile phones. Subjective tests on groups of people may be supplemented with objective tests on a manikin for reference and quality control purposes. Variations in pinna size may have significant influence on the measurement of earphones as well as leakage in telephone testing. The influence of the dress worn may also be of significance especially for the head related transfer function and on the directional response in the middle frequency range.