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**Binaural Hearing and Systems for Sound Reproduction**

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Recent developments in models of binaural hearing can be usefully adapted and extended to provide design tools for engineers engaged in the design of systems for sound reproduction. The particular focus of the work described is upon the development of models that give good statistical predictions of human sound localisation, based upon knowledge of the fluctuating acoustic pressures at the ears. Such models can be applied successfully to the prediction of stereophonic image localisation and reveal a number of important features of localisation relevant to audio system design. Developments will also be described in loudspeaker based systems for binaural reproduction that are finding their way into practical use. Binaural hearing models can be used to provide a preliminary evaluation of the performance of alternative designs. Finally, a brief review will be presented of multi-channel loudspeaker-based systems aimed at "full field" sound reproduction. Again, models of localisation provide some useful guidance for the designers of such systems.

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