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**A binaural advantage in the subjective modulation transfer  
function with simple impulse responses**

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The speech transmission index (STI) has been a popular method for predicting speech intelligibility in rooms. It is based on the magnitude of the modulation transfer function, which can be derived from the impulse response of the room and the background noise levels. However, it does not take into account that humans listen with two ears. There can be large interaural phase differences in the modulation transfer functions, which can create detectable interaural level difference fluctuations. Measurements were made to determine whether these interaural modulation phase differences can be used to enhance the detectability of sinusoidal intensity modulations imposed on a broadband noise carrier and then convolved with simple, dichotic impulse responses. The results show that there can be a significant advantage to listening with two ears over listening with just one. Some further investigations were made to determine whether this advantage in signal detection can also be used as an advantage for speech intelligibility.