AN ADAPTIVE MICROPHONE ARRAY WITH LOCAL ACOUSTIC SENSITIVITY (FriAmOR3)

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Abstract: In this paper, a microphone array with 3-D focal zone is proposed. The microphone array consists of one omni-directional and two uni-directional microphones. The microphone array is so constructed that a cross zone is generated in which the sound is captured and any interferences outside the zone would be effectively cancelled. The proposed framework is flexible in defining the location/size of the closed volume where the sound source of interest is located. Simulations have been carried out to demonstrate the 3-D spatial selectivity as well as the noise cancellation performance. The most important feature which differs from the previous works is that the super volumetric selectivity is realized by strategically use only three microphones, by which the overall apparatus acts as a virtual wireless close-talking microphone with confined position constrained in both distance and directions.