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<https://www.bksv.com/en/Campaign/HQ/M1-newsletters/M1-oct-2020/pressure-field-microphones>

diffuse field

A diffuse field refers to a space that is not a free field. In a diffuse field, sound behaves like it does in typical spaces, where sound can be reflected or scattered. Consequently, the acoustic properties of such spaces result in unique sound characteristics.

Generally, ordinary spaces are considered to belong to the category of diffuse fields.

A reverb chamber is a space intentionally designed to maximize the characteristics of such a diffuse field.

A diffuse field is a concept used in acoustics, signifying a state in which sound waves are evenly dispersed and propagated. It describes a condition where sound waves are reflected and randomly scattered due to the presence of obstacles or reflecting surfaces in the [surroundings](#).

Typically, a diffuse field is employed to model sound propagation within enclosed spaces. For instance, sound waves generated within a room, emanating from a [speaker](#), undergo reflections from surfaces such as walls and ceilings, resulting in a random dispersion of these reflected sound waves. When these dispersed sound waves become uniformly distributed within the room, a diffuse field is formed.

The concept of a diffuse field is generally significant in various audio environments, including music production, recording, and acoustic design. It aids in comprehending sound signal reflections, impulse responses, echoes, and reflection interference, among other phenomena.

Particularly in studios and music production spaces, it is crucial to control sound diffusion within a room uniformly. To achieve this, acoustic treatment devices, absorbers, diffusers, and reflective panels are employed to regulate sound wave reflections and dispersion, creating an optimal acoustic environment.

The concept of a diffuse field is instrumental in acoustic research and design, playing a substantial role in understanding and optimizing the acoustic environment within enclosed spaces.

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