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Spatial decay, behaviour and space planning models European and International standards on open office acoustics

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Recent standardisation work on open plan offices acoustics is characterized by a shift in the way room acoustics is handled. Spatial decay (expressed through rate of spatial decay per doubling of distance, DL2) is preferred to temporal decay (expressed through reverberation time, RT). The complexity of open plan office acoustic design results from the fundamental contradiction of communication and concentration. DL2 reflects better the challenges of sound control in such rooms, which is basically sound propagation control. Beyond, this contradiction, specific space analysis models and tools can help to visualize the acoustic interactions between workstations, teams and departments accommodated in the same room. These models are now ready to be included in standardization work. International technical standard for field measurements of DL2 integrates new descriptive models for open plan office acoustics, taking into account geometric proportions, presence of screens and furniture as well as group behaviour and speech characteristics, such as increased energy contents at low frequencies, voice levels, raised hearing sensitivity at high frequencies. Also, normative guidelines from Netherlands and France integrating this approach will be presented.

Keywords:

Technical area: Architectural Acoustics (AA)

PACS #1: 43.55.Dt Sound absorption in enclosures: theory and measurement; use of absorption in offices, commercial and domestic spaces (see also 43.50.Jh)

PACS #2:

PACS #3: