



## 论文摘要

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### 室内障碍物对嵌入式空调气流组织的影响

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**摘要:** 为研究室内障碍物对嵌入式空调气流组织的影响, 根据不同送风角度的主流方向设计4种布局: 室内无障碍物、送风主流恰好落在障碍物上沿、送风主流越过障碍物上沿以及送风主流完全被障碍物挡回。建立气流组织仿真模型, 并用实验验证模型的正确性。在气流组织实验和数值模拟的基础上, 采用整体气流组织评价法和分区域气流组织评价法, 对房间整体以及各区域的气流组织进行评价。研究结果表明: 室内障碍物相对于送风口的位位置及送风角度对室内整体及各区域气流组织有显著影响; 建议室内应尽量少布置障碍物, 避免将障碍物放置在完全挡住出风主流的位置, 办公地点应尽量设在离出风主流较远之处, 而离出风主流较近之处, 可作为人员暂时停留的地点。

**关键字:** 障碍物; 嵌入式室内机; 气流组织; 分区评价法; 整体评价法

### Influence of indoor partition on air distribution of ceiling-mounted cassette type indoor unit

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**Abstract:** In order to investigate the influence of partition on air distribution of indoor ceiling-mounted cassette type indoor unit, four different layouts i.e., there is no partition, where mainstream gets to the upside of the partition, where mainstream gets across the upside of the partition and where main stream is totally blocked by the partition, were designed by considering mainstream directions of different air supply angles. Based on experiments and CFD, the whole and zoning evaluation methods were used to evaluate the air distribution of the test room under different layout conditions. The results show that the relative position of the partition to the air supply outlet and the angle of the air supply have significant influence on the whole air distribution and zoning air distribution. The partition should not be put at the position where it blocks mainstream, office spots should be far from mainstream, while aisle can be near mainstream where people do not stay for a long time.

**Key words:** partition; ceiling-mounted cassette type indoor unit; air distribution; zoning evaluation method; whole evaluation method

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