THE INFLUENCE OF AIR-CONDITIONING SYSTEM AND PRESENCE OF STUDENTS ON THE AEROSOL CONCENTRATION IN THE AUDITORIUM

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Abstract: The indoor aerosols that are, among others, generated by air-conditioning systems are especially significant in school facilities. The measurements carried out in the new, air-conditioned auditorium have shown that the aerosol concentrations are strongly dependent on the operation of the air-conditioning system and the presence of students. The aerosol concentration was approximately 5 times higher when the air-conditioning (AC) system was switched on. An increased air movement inside the auditorium and the connected with it resuspention of the particles settled on the indoor surfaces could be responsible for this fact. It could also result from the ineffective operation of the AC filters. The presence of students in the auditorium caused an increase of the coarse aerosol particles irrespectively of the AC system operation. The results of aerosol particle monitoring should be taken into consideration while controlling the AC processes in order to ensure the desired indoor air quality in this type of facilities.