

WE-47**ASSESSMENT OF HOUSEHOLD PM₁₀ DUST LOADS**

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In industrialized nations, people spend most of their time in closed environments, especially at home. Walking induced resuspension has been reported to be an important source of indoor particulate matter [1]. Several factors affect particle resuspension, such as relative humidity, flooring type and dust loadings [2]. To assess and characterize household dust loadings, a sampling campaign was carried out in four different houses. In each housing unit, three rooms were investigated: kitchen, living room and bedroom. For each house, two samples were collected with, at least, a one week interval. For dust collection, an in situ resuspension chamber operating at a flow rate of 25 L/min was used [3]. The resuspended PM₁₀ fraction was collected onto 47 mm diameter quartz filters. Sampling was performed in surface areas of 1 m² for 30 minutes. Two to three different square meters were sampled using the same filter in order to ensure enough particulate mass for the subsequent gravimetric and chemical analyses. After gravimetric analyses, punches of the filters will be analyzed by a thermal-optical transmission technique to obtain the PM₁₀ carbonaceous content. Huge differences in dust loadings between rugs and hard floorings were registered. In general, higher dust loads were observed for parquet flooring compared with tile. The highest values were obtained in the living room of a suburban family house with an open fireplace. Since indoor dust contributes to exposure, its sources, resuspension rates and chemical composition should be evaluated.

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References:

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