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Gas/particle partitioning, particle-size distribution of atmospheric polybrominated diphenyl ethers in southeast Shanghai rural area and size-resolved predicting model

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ABSTRACT: A size-segregated gas/particle partitioning coefficient K_{Pi} was proposed and evaluated in the predicting models on the basis of atmospheric polybrominated diphenyl ether (PBDE) field data comparing with the bulk coefficient K_P. Results revealed that the characteristics of atmospheric PBDEs in southeast Shanghai rural area were generally consistent with previous investigations, suggesting that this investigation was representative to the present pollution status of atmospheric PBDEs. K_{Pi} was generally greater than bulk K_P, indicating an overestimate of *TSP* (the mass concentration of total suspended particles) in the expression of bulk K_P. In predicting models, K_{Pi} led to a significant shift in regression lines as compared to K_P, thus it should be more cautious to investigate sorption mechanisms using the regression lines. The differences between the performances of K_{Pi} and K_P were helpful to explain some phenomenon in predicting investigations, such as P_L^o and K_{OA} models overestimate the

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