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# The Effects of Vegetation on Longitudinal Dispersion

**H. M. Nepf, C. G. Mugnier and R. A. Zavistoski**

*Parsons Laboratory, Department of Civil and Environmental Engineering, MIT, Cambridge, MA 02139, U.S.A.*

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The influence of vegetation on longitudinal dispersion was studied in a laboratory flume for three flow velocities and three plant population densities. Rhodamine was injected continuously upstream of the dowel array and sampled at two positions downstream. The dispersion coefficient was estimated by fitting the concentration time series at the final downstream station. Enhanced turbulence as well as diminished vertical shear resulted in a lower dispersion coefficient when the plants were present. In addition, recirculation zones behind each stem trapped and delayed a fraction of the mass, enhancing the longitudinal dispersion and creating significant frontal delay. 

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