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Measuring preferential flow of gas in soil

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Preferential flow of gas (PF_{Gas}) in soil has rarely been measured. However, PF_{Gas} is important for several processes in soil such as plant and biological activity, site decontamination, oxido-reduction such as methane oxidation in landfills cover materials, gas flux during thawing, and greenhouse gas exchange. A laboratory experiment was conducted with soil columns (intact and repacked) of various sizes using Ar or Ne as gas tracers. The study presents the importance of measuring methods on the estimated PF_{Gas} relative to other gas flux processes in soil.