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Title: Method for obtaining the Knudsen diffusion coefficient

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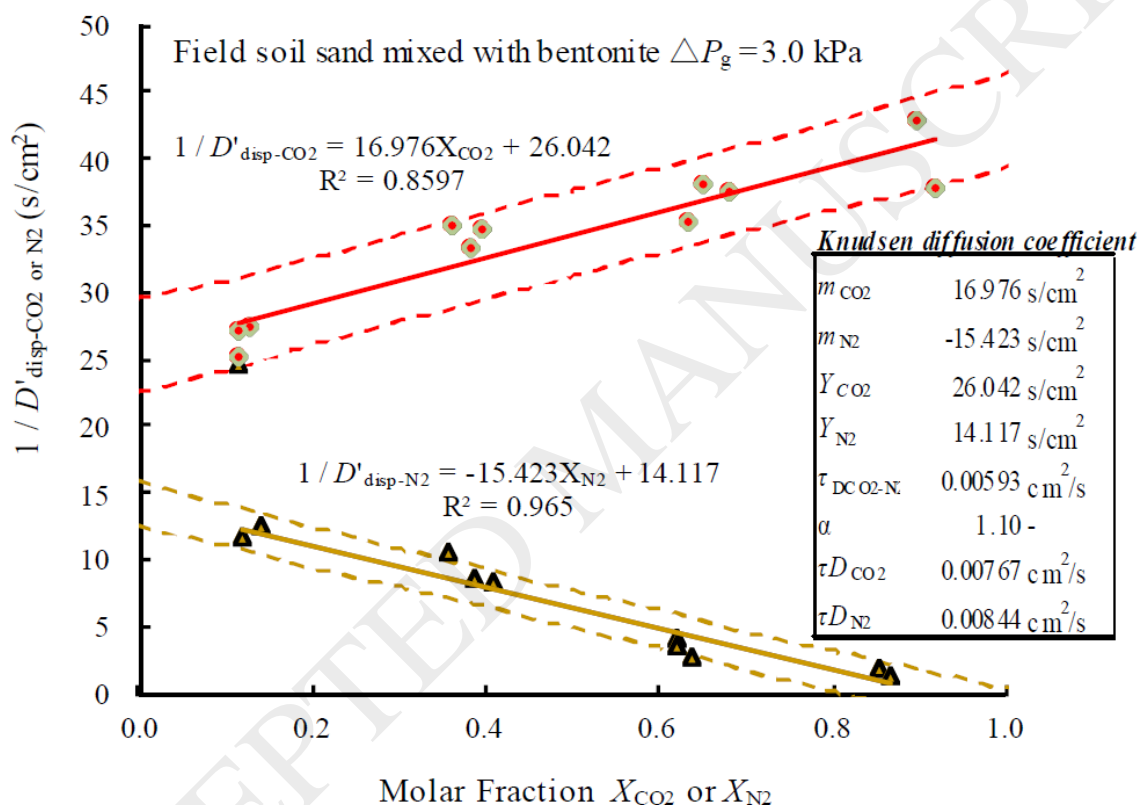
Title: Method for obtaining the Knudsen diffusion coefficient

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Graphical abstract



Highlight:

- We developed a method for obtaining the Knudsen diffusion coefficient.
- This method employs dusty gas model equations for a binary gas system.
- Equations for obtaining the Knudsen diffusion coefficient are derived.

Abstract:

Recently, we developed a method for obtaining the Knudsen diffusion coefficient from the results of tracer experiments with a binary gas system and a porous medium in a column. The developed method employs dusty gas model (DGM) equations that consider molecular diffusion, nonequimolar fluxes, and Knudsen diffusion. The equations derived from the DGM equations for the calculation of the Knudsen diffusion coefficient can also be used to obtain the molecular diffusion coefficient and the ratio of the Knudsen diffusion coefficients of the two chemicals composing the binary gas system. We performed an

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