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HIGHLIGHTS AND BREAKTHROUGHS

Entrapping CO_2, while recovering methane

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Abstract: The injection of carbon dioxide into methane hydrate-bearing sediments causes the release of methane and the formation of carbon dioxide hydrate. This phenomenon known as CH_4-CO_2 replacement creates a unique opportunity to recover an energy resource, methane, while entrapping a greenhouse gas, carbon dioxide. The paper "A comparative analysis of the mechanical behavior of carbon dioxide and methane hydrate-bearing sediments" by Hyodo et al. (2014) investigates stress-strain curves, shear strengths, and the effects of hydrate saturation, effective stress, and temperature on the mechanical behaviors of hydrate-bearing sediments that allow us to assessing the feasibility of CH_4-CO_2 replacement method.

Keywords: CH_4-CO_2 replacement, mechanical behavior, carbon dioxide hydrate, methane hydrate

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