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## 饱和粗砂、粉土内甲烷水合物形成与分解过程中的水分迁移规律

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Water transfer rules during methane hydrate formation and dissociation inside saturated coarse sand and loess

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摘要

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**摘要** 用可探测土壤水分变化的pF-meter探头组装了新型水合物研究设备,并对两种饱和介质内甲烷水合物形成与分解过程中的水分迁移规律进行研究,以期能为进一步探索多孔介质内甲烷水合物形成与分解机制提供参考.通过实验发现相同条件下,不同饱和介质内生成的甲烷水合物形态存在较大差异,且形成过程中的水分迁移规律也不同;水合物分解过程表现出的水分迁移规律与水合物常规分解事实相悖,其具体原因仍需做进一步研究.

**关键词:** 饱和 甲烷水合物 形成与分解过程 水分迁移

**Abstract:** In order to understand the kinetics mechanism of methane hydrate formation and dissociation inside porous media more comprehensively, a novel research apparatus with three pF-meter sensors which could detect water changes of soil was designed and manufactured and the water transfer rules during methane hydrate formation and dissociation inside two different saturated media were studied with the novel apparatus. It was experimentally proved that under the same formation condition, there were obvious differences in methane hydrate formation configuration and water transfer rules between inside the saturated coarse sand and inside the saturated loess during the same hydrate formation processes. During hydrate dissociation processes, the water transfer rules were abnormal and inconsistent with the conventional methane dissociation facts, which needed more studies to find out the real reasons.

**Keywords:** Saturated Methane hydrate Formation and dissociation Water transfer

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