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**INVERSE MODELING OF GROUND SURFACE UPLIFT AND
PRESSURE WITH iTOUGH-PEST AND TOUGH-FLAC: THE CASE OF
CO₂ INJECTION AT IN SALAH, ALGERIA**

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ABSTRACT

Ground deformation, commonly observed in storage projects, carries useful information about processes occurring in the injection formation. The Krechba gas field at In Salah (Algeria) is one of the best-known sites for studying ground surface deformation during geological carbon storage. At this first industrial-scale on-shore CO₂ demonstration project, satellite-based ground-deformation monitoring data of high quality are available and used to study the large-scale hydrological and geomechanical response of the system to injection. In this work, we carry out coupled fluid flow and geomechanical simulations to understand the uplift at three different CO₂ injection wells (KB-501, KB-502, KB-503). Previous numerical studies focused on the KB-

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