Experimental studies applied to Underground Hydrogen Storage in Porous Media

INTRODUCTION

Hydrogen has recently gained attention because it is a clean and versatile energy carrier. As an energy carrier, it is produced and stored during surplus energy periods and used during deficit periods. Underground porous reservoirs represent a good option for its long-term storage as they assure good capacity and containment. Still, technical questions surround their ability to retain and retrieve high purity hydrogen through injection-withdrawal cycles. Experimental studies reproducing the interactions among hydrogen, in situ fluids, and host rock, are essential to better understand and design **Underground Hydrogen Storage facilities.**



OBJECTIVES

- To describe what is the state of art of experimental studies applied to Underground Hydrogen Storage in porous media
- To emphasize the importance of hydrogen hydrodynamics experimental work
- To highlight my research plan regarding experimental studies to determine hydrogen mixing with cushion gas

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Injection-withdrawal cycling effects in mixing need further investigation





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