



Interpretação de dados sísmicos em bacias sedimentares para armazenamento de CO₂ em reservatórios potenciais - Bacia do Recôncavo

Flávia Lobato Guimarães ¹; Paola Quintela dos Santos ¹, ¹ FAGEOF/UFPA

Copyright 2023, SBGf - Sociedade Brasileira de Geofísica.

This paper was prepared for presentation during the 18th International Congress of the Brazilian Geophysical Society held in Rio de Janeiro, Brazil, 16-19 October 2023.

Contents of this paper were reviewed by the Technical Committee of the 18th International Congress of the Brazilian Geophysical Society and do not necessarily represent any position of the SBGf, its officers or members. Electronic reproduction or storage of any part of this paper for commercial purposes without the written consent of the Brazilian Geophysical Society is prohibited.

Abstract

This summary focuses on the role of seismic interpretation in the identification and monitoring of reservoirs for carbon dioxide (CO₂) storage. Seismic interpretation plays an important role in characterizing these reservoirs, providing information about subsurface structure, reservoir geometry, lithology, and possible flow paths. Additionally, seismic interpretation allows for the detection of CO₂ plumes, estimation of gas saturation, and assessment of migration behavior. The use of seismic attributes in the interpretation of data from the 0026 CEXIS cube adds an additional layer of analysis and understanding. These seismic attributes, such as similarity, energy, and instantaneous, can provide more detailed information about reservoir characteristics and help identify areas of interest for CO₂ storage. However, it is important to note that seismic interpretation and analysis of seismic attributes should be complemented by well data to obtain a more complete and accurate understanding of the subsurface. For the application of this summary, the Recôncavo Basin was the study area. The 0026 CEXIS seismic data cube, located in the central-southern Recôncavo Basin, is a set of geophysical information that was made available by ANP (National Agency of Petroleum, Natural Gas, and Biofuels) for this study. This cube contains seismic data that were acquired and processed with the aim of obtaining information about the subsurface of the study area. The 0026 CEXIS cube is a three-dimensional representation of seismic data, where different rock attributes and properties are mapped and visualized. These seismic data are essential for the geological and geophysical interpretation of the region, allowing the identification and characterization of geological structures, lithologies, and potential hydrocarbon reservoirs. In the context of this study, the 0026 CEXIS cube was used to investigate and identify possible potential reservoirs for CO₂ storage in the Recôncavo Basin. Through the interpretation of the seismic data contained in this cube, techniques for reservoir analysis and characterization were applied, such as the identification of structural features, mapping of lithologies, analysis of acoustic impedance, among others. Through the interpretation of the data contained in this cube, using the Opentect software, it is possible to visualize horizons, which, in the context of carbon sequestration, refer to specific geological layers where carbon storage occurs. Carbon sequestration involves the capture and storage of carbon dioxide (CO₂) from the atmosphere with the aim of reducing greenhouse gas emissions and mitigating climate change. It is worth noting that well data may be used in future work.

Key-words: carbon sequestration, seismic interpretation, CO₂ storage reservoirs, seismic attributes, Recôncavo Basin