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Geological, Social-scientific and Economical Analyses of the Potential Sites for CO₂Basaltic Aquifer Storage

Yutaro Takaya^{1*}, Kentaro Nakamura², Yasuhiro Kato¹

¹Sys. Innovation, Univ. of Tokyo, ²PEL, JAMSTEC

A basaltic aquifer is a suitable candidate for CO₂geochemical trapping because basaltic rocks contain high cation abundances of Mg and Ca that govern acid neutralization potential of rock and formation of stable carbonate minerals. In particular, continental flood basalt and sub-seafloor basalt are proposed as potential sites for CO₂basaltic aquifer storage (McGrail et al, 2008, Goldberg et al. 2008).

Presently, many researchers mostly focus on the CO₂continental flood basalt storage due to easy access and high viability. However, the CO₂storage potential in the sub-seafloor basalt aquifer is enormous and the sub-seafloor basalt aquifers have some geological advantages in the aspect of CO₂storage security to the inland aquifers. Thus we provide geological, social-scientific and economical analyses of potential sites for CO₂basaltic aquifer storage option (continental flood basalt and sub-seafloor basalt) and propose the optimum site for the CO₂basaltic aquifer storage.

<References>

- [1]Goldberg DS, Takahashi T, Slagle AL. (2008) Carbon dioxide sequestration in deep-sea basalt. Proceedings of the National Academy of Sciences. vol. 105. no. 29, 9920-9925
- [2]McGrail BP, Schaef HT, Ho AM, Chien Y, Dooley JJ. (2006) Potential for carbon dioxide sequestration in flood basalts. Journal of Geophysical Research vol. 111: B12201, 10.1029/2005JB004169.

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