

## **Geochemical behavior of CO<sub>2</sub> sequestered in an open aquifer using TOUGHREACT code: the Tokyo Bay model**

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In an open aquifer storage of CO<sub>2</sub>, the geochemical trapping, such as the dissolution of CO<sub>2</sub> in formation water and the precipitation of carbonates at the expense of injected CO<sub>2</sub>, is expected to play an important role in a long period of storage. The Geological Survey of Japan, AIST, has been conducting a three-year pilot project to elucidate the geochemical behavior of CO<sub>2</sub> injected in an open aquifer, setting Tokyo Bay area as a hypothetical site of CO<sub>2</sub> storage. We carried out a geochemical simulation, using TOUGHREACT simulator, at hydrogeological and geochemical conditions of the Tokyo Bay area. This paper presents the results of our study, including a limited mobility of CO<sub>2</sub> plume and relative stability of various carbonates.