

# Japan Geoscience Union Meeting 2011

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HRE031-05

Room:303

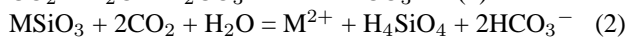
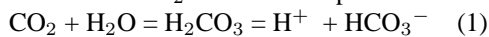
Time:May 24 09:30-09:45

## application and analysis of water-rock-carbon dioxide reaction using basalt

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Water-rock-CO<sub>2</sub> reaction is important in many parts of science. Main reactions are as follows.



M is divalent metal ion.

There are two steps. First, CO<sub>2</sub> dissolves into water at (1) and mineral(MSiO<sub>3</sub>) and water react with CO<sub>2</sub> at (2). Next, divalent metal ion and HCO<sub>3</sub><sup>-</sup> react and precipitation occurs at (3).

We will apply it to the CO<sub>2</sub> underground sequestration and the estimate of Archean atmospheric CO<sub>2</sub> concentration and global carbon cycle and materials of subsystem.

Keywords: basalt, water-rock reaction, CCS, the dissolution rate constant, simulation