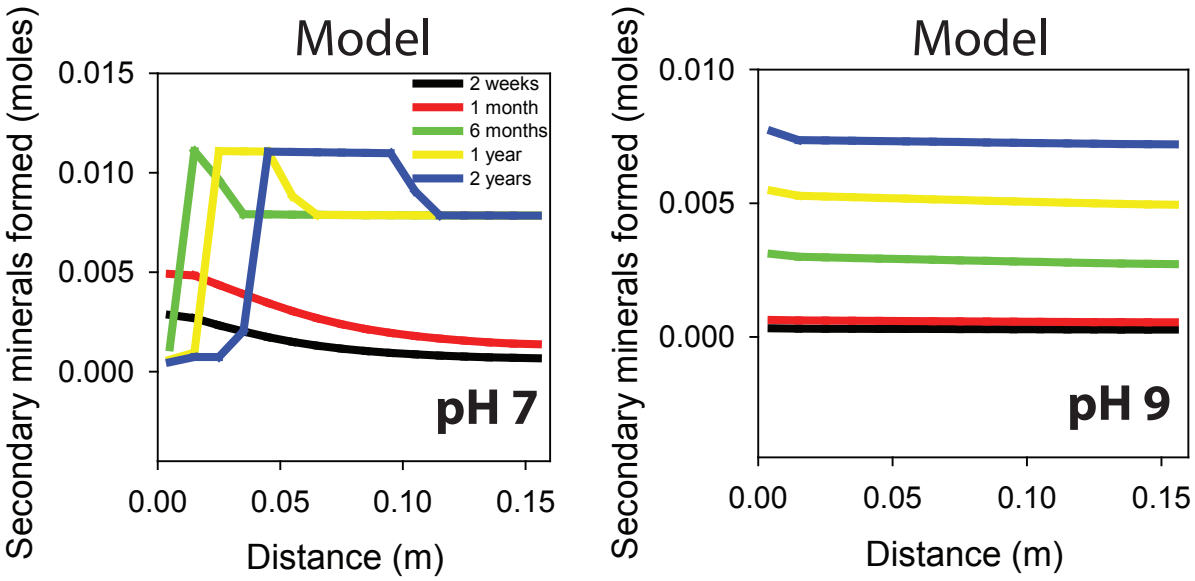
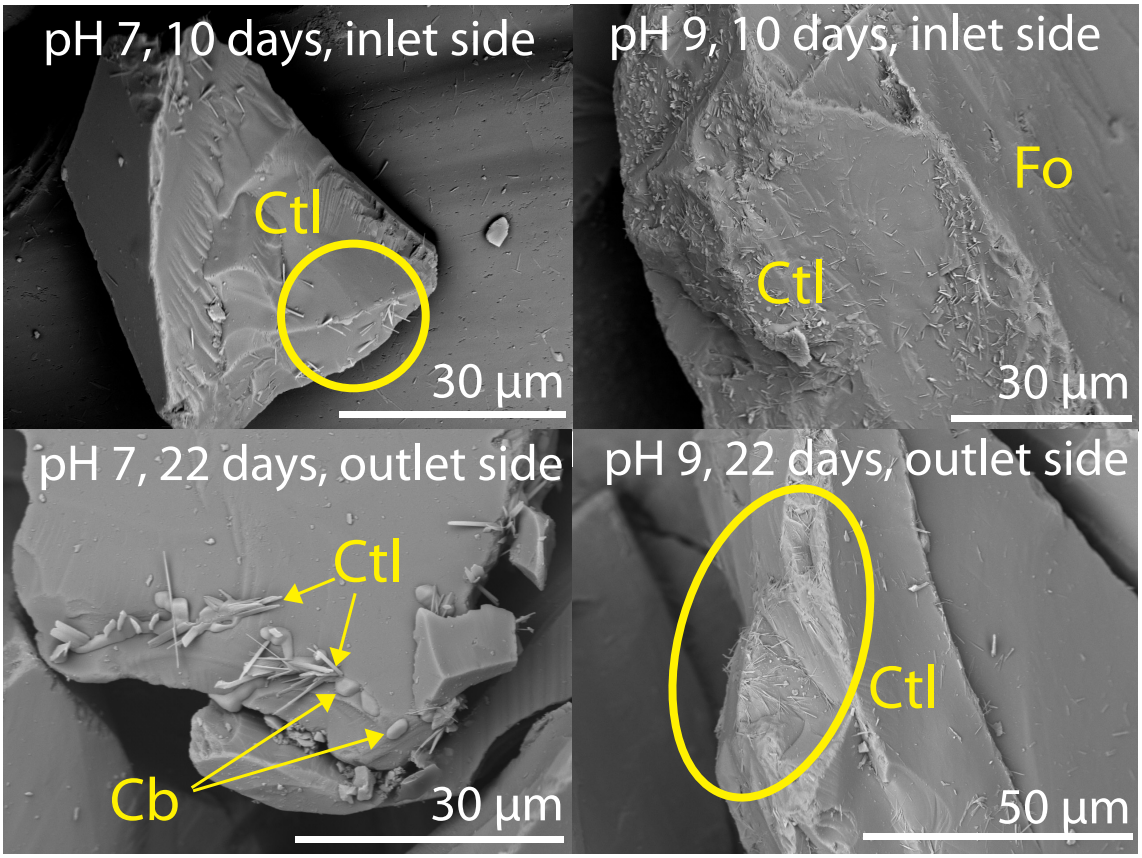


Experiments



SEM pictures with characteristic surface at given time compared to mass transport modeling in open system.

Legend: Ctl - chrysotile, Cb - carbonate, Fo - forsterite

Jan Prikryl: Progress Report Semester 2

To increase our understanding of progressive CO_2- fluid rock interaction in a flow-through column, 1-D reactive transport simulations were perfomed together with laboratory experiments. The results of the simulations and the experiments were in good agreement. The CO_2-fluid olivine interaction in flowing porous media may be divided into three progressive stages: Stage I Initial olivine leaching and secondary mineral formation, Stage II, further olivine leaching and secondary mineral growth and Stage III dissolution of previously formed secondary minerals. The exact evolution of these stages and rate of mass movement was found to be largely dependent on pH. However addition of secondary phases kinetics could considerably help in a such mass transport simulations to obtain better fit of a model with experimental reaction paths.