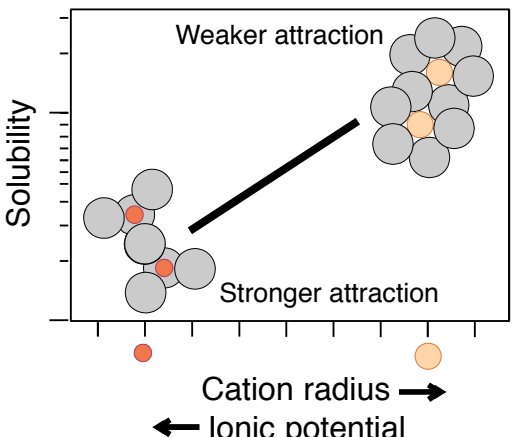
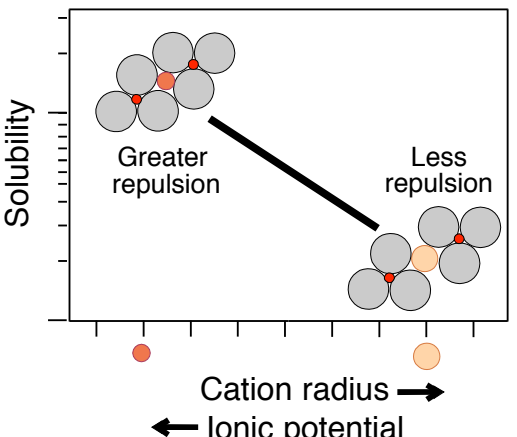
Comparative solubility of minerals III: Explanations via bond strength and cation-cation repulsions

These cartoons explain trends in data shown in Part I of this series and explained with text in Part II of this series. This page is only a mechanism to provide easier viewing of the cartoon-graphs.

Fluorides and oxides:
Attraction of cation to anion dictates solubility.



Nitrates and sulfates:
Repulsion between inter-radical cation (●) and intra-radical cation (●) dictates solubility, trumping cation-anion interaction.



LBR SolubilityOfMinerals0301.odg 11/2012

Large cation of low ionic potential (e.g., K^+ or Sr^{2+})

Smaller cation of higher ionic potential (e.g.,Li^+ or Be^{2+})

Very small highly charged cation of great ionic potential (e.g.,N^{5+} or S^{6+})

O^{2-} or F^-

Radical group (e.g.,NO_3^- or CO_3^{2-})