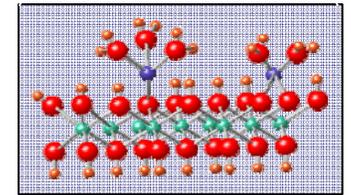
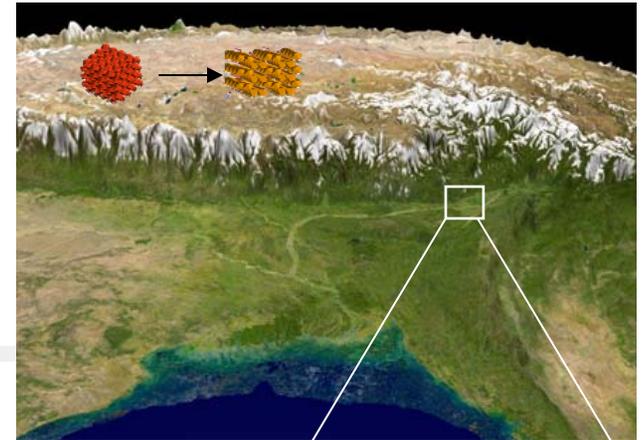


Reactive Solids

within the Environment



- Solids control the fate of contaminants and nutrients
 - Act as sinks and sources
 - Provide buffering of aqueous phase
- Transformations alter reactivity
- Rapid transformations
 - Biologically and chemically induced
- Need to define rate of transformation within natural conditions

Real-Time Measurement



- Solid phase transformations occur on rapid (s to min) time scales
- Reactions propagate under hydrated conditions
- Need for *in situ* measurement
 - Require linking dynamic reaction cell to *in situ* measurement
- Need to deal with elemental interferences
 - Tunable energy
- Need spatial resolution (smaller is better) and (ideally) ability to obtain spatial maps

