Sum frequency vibrational spectroscopy studies of hydroxyl functional groups and hydrogen bonding on corundum surfaces: Challenges and future applications

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Frontiers in Geochemistry
Seminar Series

Presented by…

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Sum frequency optical techniques can be used to characterize reactive functional groups (hydroxyls, amines, carboxylates) on mineral surfaces with certain caveats. In the best cases direct comparisons can be made with surface x-ray scattering structural information, and acid-base protonation reactions can be explored *in situ* on a molecular basis. Applications to strongly colored or fluorescent minerals present problems, but there are strategies that can be used to work around these issues. Studies of organic molecule sorption and interfacial reactions appear very promising and are being developed. The talk will discuss how we hope to effectively merge information from surface x-ray scattering, sum frequency vibrational spectroscopy , and computational approaches to develop an improved picture of solid surface terminations, inorganic and organic sorbate binding, hydrogen bonding and local water structure.

More info:

Dr. Kevin Rosso, 371-6357

Wednesday
February 15, 2012

ETB Columbia
River Room

9:00 – 10:00 am