Phosphate Adsorption on Hematite. (S02-khare143654-Poster)

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Abstract:

Phosphate interactions with oxide surfaces are important for understanding P contamination and bioavailability. In soils, Al and Fe oxides are primarily responsible for the adsorption of phosphate. However the mechanisms of phosphate reactions with oxide surfaces are still poorly understood. In this study, phosphate adsorption on hematite was investigated using adsorption experiments, XANES and ATR-FTIR spectroscopy. The adsorption isotherms of phosphate were obtained at pH 4 to 10 and it was found that the maximum adsorption of phosphate decreased as the pH increased. The XANES and ATR-FTIR spectra of phosphate adsorbed on hematite were obtained in-situ at different pH's and surface concentrations. The ATR-FTIR results suggested the predominant formation of inner sphere bidentate complex and XANES spectra revealed no formation of iron phosphate.

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