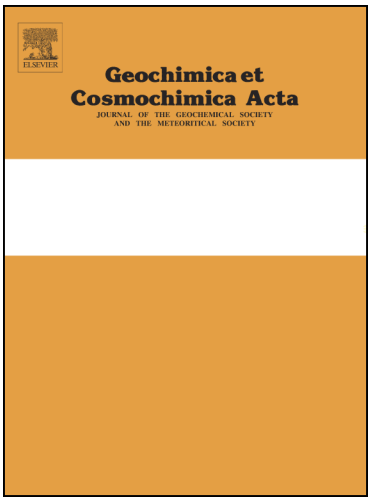

Interplay of crystal fractionation, sulfide saturation and oxygen fugacity on the iron isotope composition of arc lavas: An example from the Marianas

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Interplay of crystal fractionation, sulfide saturation and oxygen fugacity on the iron isotope composition of arc lavas: an example from the Marianas

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Abstract

Subduction zone systems are central to a multitude of processes from the evolution of the continental crust to the concentration of metals into economically viable deposits. The interplay between oxygen fugacity, sulfur saturation, fluid exsolution and fractionating mineral assemblages that gives rise to typical arc magma chemical signatures is, however, still poorly understood and novel geochemical approaches are required to make further progress. Here we examine a well-characterized suite of arc lavas from the Marianas (W. Pacific) for their stable Fe isotope composition. In