Exploring for porphyry deposits in different tectonic settings using mineral chemistry? An empirical approach

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ABSTRACT

This discussion will look at hydrothermal epidote trace element data from porphyry prospects and deposits in the circum-Pacific Rim region and other relevant belts to evaluate if different tectonic settings could and should be considered when building tools for porphyry exploration. Significant data compiled over a decade including Rio Tinto exploration projects, public AMIRA data and academic research projects can now allow a robust analysis of the observed broad variation of epidote trace element chemistry with region, whilst accommodating local variations at district scale. Possible causes for these variations are not fully understood but identifying potential differences are crucial for the development of local, belt-related or global tools for fertility assessment and vectoring applied to porphyry exploration using mineral chemistry.