Mafic rocks vs. Sb-mineralisation: a role in the early metal distribution processes? Insights from the Variscan Armorican belt (France)

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The Armorican belt is part of the western European Variscan belt. Although the region was one of the world leader producers of antimony at the beginning of the 20th century, the geological controls behind these deposits remain badly constrained. Here we present a spatial statistical analysis of the Sb-mineralisation, together with geophysical and geological data [1]. Results show that the Sb-mineralisation is spatially associated with strong positive gravity and magnetic anomalies which must be linked to the presence of mafic/ultramafic bodies at depth. This spatial link is further supported by the numerous outcropping occurrences of dolerite dykes and sills close to the Sb-deposits and sometimes hosting the mineralisation. This mafic magmatism, dated by in-situ U-Pb analyses on apatite at ca. 360 Ma, appears as a regional-scale event at the Devonian-Carboniferous boundary. In addition, new data suggests that mafic magmatism may have probably played a role in the early distribution or redistribution processes of metal stock in the subsequent history of the antimony in the Variscan Armorican belt.

[1] Pochon *et al*. (2016). *Terra Nova*, doi: 10.1111/ter.12201