Vendredi 19 février 2016 Amphithéâtre Palissy, 11h
Automated Mineralogy (QEMSCAN®): Past, Present and Future – Untapped Analytical Potential

conception graphique : vanessa Fournier photographie : Le volcan Pabellón del Inca vu depuis le site métallurgique préhispanique Collahuasi 37 ©C2RMF/Benoît Mille

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Automated mineralogy (AM) has been used commercially in the mining industry since the 1980´s. Such technology is extremely useful in presenting geological information (i.e. mineralogy and geochemistry) in a format that is of benefit to mineral processing systems for a wide range of deposit types. As technology has developed this has enable automated mineralogy to expand its capabilities and thus diversify its applications. Subsequently, the last 10 years has seen a wealth of new possibilities, information and publications incorporating Automated Mineralogy.

Automated mineralogical systems are principally based on a scanning electron microscopy (SEM) with linked energy dispersive spectrometry (EDS) detectors, both relatively common analytical instruments used across a range of scientific themes. What makes AM systems unique and powerful is the ability to combine these technologies (along with other detectors) to rapidly generate a vast wealth of information, incorporating such variables as mineral phase identification, elemental concentrations and maps, whole rock elemental concentrations, particle sizes and distribution, particle shapes, elemental deportment, mineral associations, textures, and liberation amongst others. Accordingly, Automated Mineralogy can provide important information to any scientific theme that requires information about solid substances (e.g. minerals, alloys, precipitates etc).

This presentation will explain the basics of the QEMSCAN technique and give examples of traditional mineralogical applications in the context of geological and mining investigations, followed by a discussion on how QEMSCAN may be relevant for new areas of study, particularly in the field of Archaeology and Art History.

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