



Relations between ore deposits and granites resulting from low degree of melting of the continental crust

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Ore deposits present three major types of relations with granites: syn-magmatic mineralization disseminated in the granites themselves (such as rare metal granites or pegmatites), magmatic-hydrothermal mineralization occurring as veins within the granites or in enclosing rocks (such as porphyry type deposits), and deposits generated by hydrothermal fluids of variable origin and occurring within the granites or their vicinity soon or much later than granite emplacement (such as vein-type uranium deposits). Besides this diversity of relations between granites and mineral deposits there is also a large diversity of magma types which may in relation with mineral deposits. We will focus our contribution on magmas produced by moderate degree of partial melting within the continental crust leading to the formation of anatectic pegmatoids for very low rate of partial melting and peraluminous leucogranites for low rate of partial melting. The major processes controlling the solubility of the metals in these magmas will be reviewed. The role of metal enrichment: (i) in the sources lithologies, (ii) as external input by fluids liberated during granulitisation of metasediments by a carbonic wave, (iii) extraction from enclosing metamorphic rocks, will be discussed.