Ore-Forming System around Magma

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According to the spatial and original relationship between current hydrothermal metal deposits and magmatic body, and referring to the ideal mode of deposits element zonage which is proposed first by Russian geochemist, this paper puts forward the ideal mode of the distribution of the magma deposits, it is also called “Ore-forming system of magmatic rock center”. This mode is centred on the top rock mass which invades to the near-surface surrounding rocks, it is divided into inner-zonage, transition-zonage, medium-zonage and outer-zonage. The mode scatters by hypothermal deposits, mesothermal deposits and epithermal deposits from inner-zonage to outer-zonage regularly. Inner-zonage is mainly distributed by the deposits which usually form in the magmatic rock like Nb,Ta,Hf,Li, they are equiaxed shapes because controlled by the magmatic rock. Transition-zonage is mainly hypothermal deposits like W,Sn,Mo,Bi, they are mostly three-dimensional. Medium-zonage is mainly distributed with mesothermal deposits like Cu,Pb,Zn by lenticular shape. Outer-zonage is mainly distributed with epithermal deposits like Au,Hg,Sb, they are mostly nervation and beaded shape along the tectonic fissure. Ore forming around the magmatic center has its own unique process: after magmatic rock invading to the water surrounding rock, there is a partly high temperature field which is the key leading to the hydrothermal deposits material cycle. Individuals which formed under the ideal mode are controlled by the forming condition: the depth of invading magmatic rock, the lithology or property of water-bearing of surrounding rock; physicochemical property of magma, invading temperature, magma scale can all cause the integrity of magmatic center metallogenic series and shape variation.