

## **LAYERED INTRUSIONS AS THE OUTCOME OF A POLYCYCLICAL DEVELOPMENT OF MAGMATIC SYSTEMS.**

MALYSHEV A.I. Institute of geology and geochemistry, Ekaterinburg, Russia.

The dynamic activity of magmatic systems is usually manifested through the unlinear self-oscillating process with large set of system's frequencies. Rhythmic and macro-rhythmic layering of large intrusive complexes of basic and ultrabasic rocks have a simple and natural explanation within the dynamic model of the magmatic process. The parentage of polycyclic layering, in my opinion, is defined by the self-oscillating changes of physicochemical conditions of the magma's crystallization. These changes are acting on the all processes in the system. Intermagmatic pressure have highest variability. The increasing pressure is decreasing probability of origin of crystallization centers because of potential barrier on origin of new crystallization centers. Therefore formation of a crystalline phase is going by accelerated growing of already existing crystals. This process has maximum near the bottom of magmatic camera, where the pressure is maximal. The most legibly expressed phenocrysts generations should be formed here. Precipitable phenocrysts are differentiating by density, and, therefore, gravitational stratums are forming. Oscillations of pressure lead to cyclical displacements of mineral equilibriums in the system. The increase of pressure is the result of gases detachment from melt to free phase, while the pressure trip-out is the result of release of gases or gassy melt from the magmatic system into surroundings. It should lead to polycyclic changes of magma's chemical composition. Therefore the polycyclic self-oscillating process of becoming of magmatic systems is the cause of forming of polycyclic layered intrusive complexes.