



About independent tectonic position of diatreme fields and zones

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Abstract. Geologists repeatedly made attempts to determine the structural position of diatreme (D) fields on platforms, and in conjunction with the regional tectonic zones, rifts, aulacogens, deep faults, zones of fracturing, domed structures, etc. However, the options presented such position clearly inconsistent, do not correspond to each other and are the result of extreme subjective interpretation in low volume of geological and geophysical data. Despite ongoing attempts to link D-fields and zones to any tectonic structures, it is clear that these do not have to accommodate of D no relationship (although coincidences are possible). It was established that:

- D-fields are not sharply defined geological boundaries, which would be reflected in the structure of the cover or foundation;
- localization of D-fields not related to regional faults, nor with their intersection nodes;
- D-zones have independent structural position and also not associated with fault zones;
- zones of fracturing imposed in some D-fields are due to the formation of D-pipes, not the cause of their location;
- formation D-pipes and dome-shaped structures is a single process associated with the intrude force of D-melt; domed structures, corresponding D-fields, formed as a result of simultaneous ("battery") introduction of magmatic melt. This is supported by the fact that these structures do not have deep roots and flatten with the depth (Kaminski et al, 1995)

As a result of the analysis and comprehension of these data, the author has developed the following affirmation: the main pattern in the distribution of K-fields and zones lies in their lack of universal spatial relationships with older crustal structures, in their independent ("indifferent") position on these structures.

Established pattern can be easily explained from the standpoint of "Bolide model" of the diatremes (including kimberlite) origin, whereby D are result of electrical discharges in the upper horizons of the crust; cause such discharges are electrical currents induced by flying cosmic body of asteroid sizes on the surface and in the interior of the Earth (Khazanovitch-Wulff, 1991, 2007, 2011). Naturally, the trajectory of the cosmic body entering the planet's atmosphere will not coincide with the structural elements of the crust. Available coincidence can only have a random character. It is likely that a similar independent position could occur when "moving" hot spot - another potential source of electrical discharges.

References

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