

## DISCOVERY AND MAPPING OF DISJUNCTIVE BREACHES BY GRAVIMETRIC AND MAGNETOMETRIC METHODS

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HC traps are confined to jointing raised zones, controllability of traps by disjunctives does the problem of the discovery and mapping of faults solely important. As a rule, deposits sections possesses it is enough contrasting by density distribution.

Directions and locations of tectonic disjunctives general zones are forecasts by potential fields anomalous. Naturally that different transformations of the field with that or other parameter find explosive disjunctives by different depth and length, confining to different structured levels.

"With development of the beliefs about regularity accommodation of the oil and gas deposits becomes all more obvious revealing in many aspects crowding space-genetic relationship of deposits with faults by the different rank. Thereby, problem of mapping faults zones gains paramount importance at searching for HC traps, their usages and prevention of its negative consequence" [4].

Any disturbance of continuousness and bedding of rocks, whether transcontinental rift or, fault necessary is reflected in gravity. This occurs, first of all, because zone of the fault, disjunctive presents is weakened area with raised cracking, describable by one or another degree deficit of density. As a rule, gravitational effect, caused by disjunctive breaches of any ranks, in over and over again increases to account displacement of rocks along rifting line. The most expressing effects stipulate by vertical displacement of the rocks.

### **Gravitational fields modeling for different types of the breaches.**

Gravimetric modeling of the different types of disjunctives shows that though at first opinion Gravitational effects from all types of the faults introduce to be close by configuration, indeed conditioned by them anomalies, differs very greatly: each of they are characterized especial, not reiterative in other typical forms of field anomalies. On fig. 1 are presented gravitational effects, conditioned by different disjunctives types at condition of the differences of density  $0.1 \text{ t/sm}^3$ . As it is seen on brought figures, the graphics forms, displaying total gravity from fragment disrupt layer in different types disjunctives, sharply differs. The different transformations of the field are increases this differences. In practice, when is interpreted total field, presenting itself superposition of effects from the number of masses, successful determination of disjunctives presence, separations of its effect from total field, determination of its type will require rather fine work, carefully-go analysis of the anomalous field. The success of these studies owned by predetermine the skill of the interpreter to select the influence of the under study object from observed field that is provided mainly by right choices of the transformation of the field, parameters of its realization, accuracy of the calculations and ease of manufacturing used software.

### **The Methods of the faults revealing and mapping by gravity and magnetic data.**

The considered problem resolves by several methods groups, having in principal different mathematician-methodical justifications. In connection with defect of information of physical characteristic of rocks the most applicable in these purpose methods of interpretation, do not require information about density, magnetic receptivity etc. Such are a methods, is founded on different linear and nonlinear transformation and determination of singular points location.

Faults origin in sedimentary чехле West Siberia plate is conditioned, basically, by differently directed motions of base block on different stage of tectonic developments (from Trias to Quaternary).

Fig. 1. Modeling гравитационных by flap for different types of the breaches.

a - a model of the unset; density constant and alike for both block; b - a model of the un-  
set; уплотнение in zone дизъюнктива; c - a model of the unset; the decompaction in  
zone дизъюнктива; d - a model взброса; the decompaction in zone дизъюнктива; e - a  
model взброса; the decompaction in zone дизъюнктива; f - мо-divide; share shift; density  
constant and alike for both block; g - a model of the shift; the compaction (on 200%) in  
zone дизъюнктива; h - a model of the breach; density constant and alike for both бло-ков;  
j - a model of the breach; the compaction in zone дизъюнктива; i - a model взброса; the  
compaction in zone of the breach.

Probably, like a speedup of the growing of the structures has conditioned not only activity  
of the old disjunctive breaches, but also origin new. Herewith characteristic of formation  
"орпум-ряющих" break of the second order, leaving from the main under greater corners.  
From north border HMAO before Width Priobiya is revealed кулисообразное construction  
оперяющих break, on which occur the horizontal shifts of the foundation. Obviously that  
large breaks (the seams) are листрическими. For majority break characteristic of absence  
of the extensive zones дробле-thread, in accordance with process of the sprain and com-  
pressions. Here come to light sooner systems верти-кальных and tilted rifts. The De-  
scribed particularity points to превалирование vertical displacement геоблоков on hori-  
zontal.

The Explosive breaches on area west HMAO, are chosen on base anomaly горизон-  
тальной derived and полосовой to filtering гравитационного field. On base of the  
scheme распреде-pouring specified anomaly закартированы disjunctive breaches, condi-  
tionally divided into two classes: chosen on anomaly greater and smaller intensity (the rice.  
2). Dosto-faithfulness of the separation of the breaches is obliquely confirmed at collation  
of the desksides дизъюнктивов, revealed on anomaly of horizontal derived power to gravi-  
ty, with scheme other трансформант. This is well seen and on scheme vertical derived  
гра-витационного field, and at recalculation of the field on depths 5км and 10км. In other  
words, revealed breaches well physically denominated, limiting clearly prepared blocks.

Fig. 2. The Schemes observed гравитационного field (on the right) and horizontal derived  
on area in west part Hanty-Mansiyskogo neighborhood (on the left).

ОВI-Tazovskaya system, belonging to north тектонической to zone, greatly миогеосинк-  
линальная. For north тектонической of the area typical most sharp change the depths of  
залегания foundation, the large linear structures субмеридионально-go directions of the  
type gross, sagging and мегавалов.

Discovery дизъюнктивов on Hambateysko-CHugoriyahinskom area has shown the more  
interesting punishments-pond scum. Characteristic of that breaches dominating as a whole  
for region субмеридионального простирания does not prevail on given area (the rice. 3).  
Given circumstance, certainly, in significant measure is defined presence powerful forming  
south extremity of the intensive maximum гравитационного field near north border area  
исследова-thread. Herewith, any transformations of the field fix the breaks on peripheries  
of the maximum. The Gradients by potential flap, extent and выдержанность revealed  
breaches point the lasts to comparatively greater depth of the pawning. Practically close to  
him on position and простиранию "seismic" breaks are characterized as a whole not-how  
much smaller extent and выдержанностью of the direction. All this points to mainly deep,  
within доюрских of the thick masses, pawning break, showing-sya in гравитационном  
and magnetic floor while, breaks, revealed on результа-there сейсморазведки, in greater  
degree touch the sedimentary slip cover. In that event, when systems break, got and on  
that, and on the other method, are characterized alike простиранием, practically coincide  
(that we and observe on under investigation area) мож-but confirm that breaks, appeared  
in доюрских formation, in most cases penetrate and in sedimentary thick mass.

Fig. 3. The Scheme horizontal derived gravel-тационного field on Hambateysko-CHugoriyahinskom area. The Explosive breaches chosen on base anomaly: 1 - горизонтальной derived гравитационного field; 2 - функция седловидности гравитационного field; 3 - an полосовой to filtering the field of power to gravity; 4 - a horizontal derived magnetic field.

Fig. 4. Gravitacionnoe field Angoly. On-collapsing, chosen on 1 - an полосовой to filtering гравитационного field, 2 - on horizontal derived гравитационного of the field, 3 - an полосовой to filtering магнитного of the field, 4 - on horizontal произ-water magnetic field. Interpretation гравитационных and magnetic anomaly on territory Angoly has allowed you-show the serieses a break for big extent. The Results are received by means of on-лосовой to filtering anomaly гравитационного and magnetic flap with frequency 7 - 47 and 3 - 31, with-responsible, as well as horizontal derived that and the other field (the rice. 4). Most инте-ресным by fact detectable on specified drawing, is an undoubted prevalence тек-tonic breaches YUZ - SV простирания. The breaches turn out to be In evident minority to farted-пендикулярного простирания. The Breaks both меридионального, and width direction отсут-ствуют completely that allows to do the row interesting geological conclusion. Geological наибо-лее interesting grouping the breaches, revealed different way, in compact zones, characterized alike простиранием. The Specified particularities are interpreted as weaken;relax-ленные, raised трещиноватости zones, deskside which will well with наблю-given anomaly.

#### Literature

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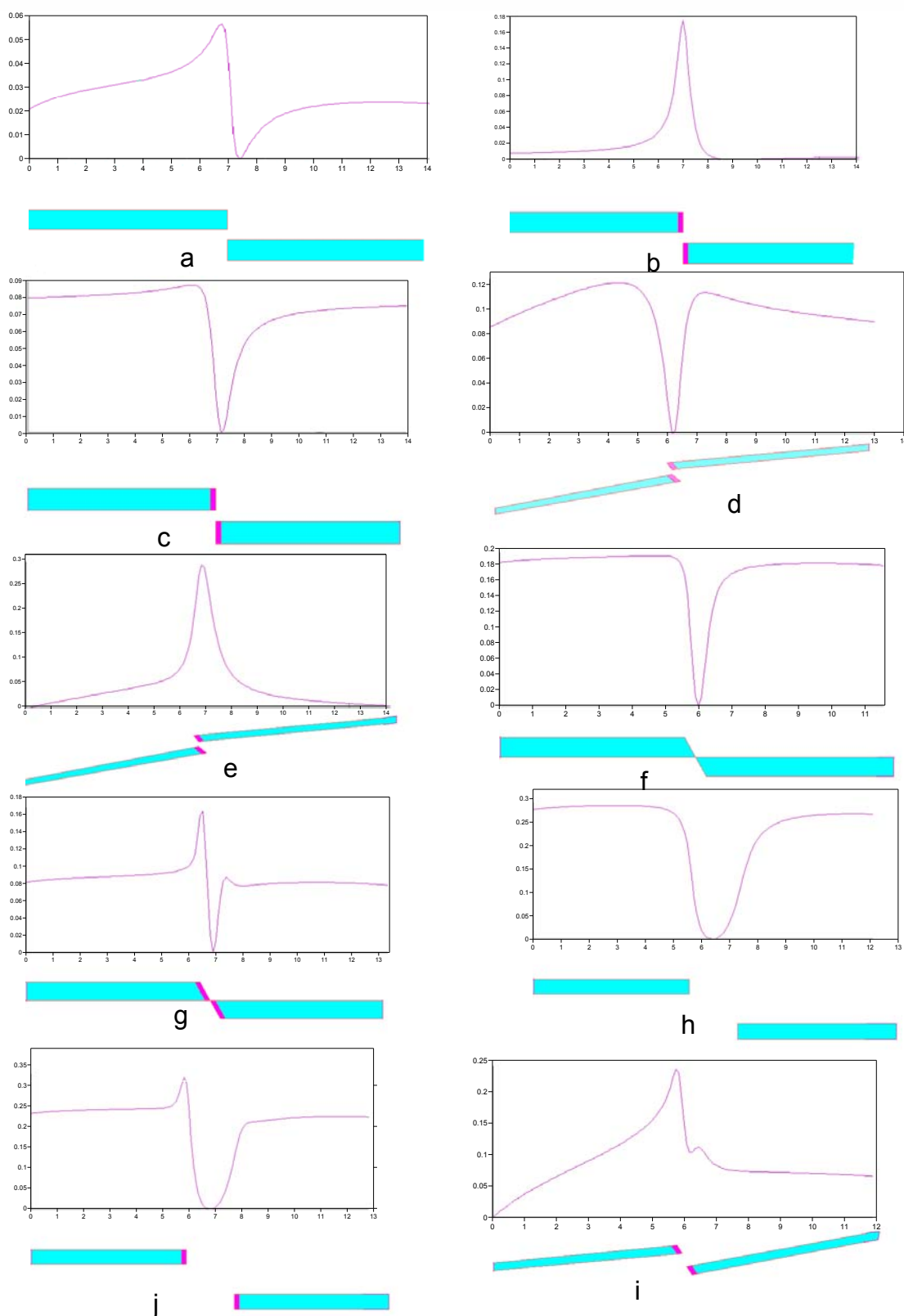


Рис. 1. Моделирование гравитационных полей для различных типов нарушений.

Gravitationl fields modeling for differ type of faults.

a - Lag model; density is constant and identical for first and second model blocks;

b – lag model; incompaction in justifications zone; c – lag model; decompaction in justifications

zone; d – lag model; decompaction in justifications zone; ; e – модель взброса; разуплотнение в

зоне дизъюнктива; f – модель сдвига; плотность постоянна и одинакова для обоих блоков; g

– модель сдвига; уплотнение (на 200%) в зоне дизъюнктива; h – модель нарушения; плот-

– модель нарушения; плот-

ность постоянна и одинакова для обоих блоков;  $j$  – модель нарушения; уплотнение в зоне дизъюнктива;  $i$  – модель взброса; уплотнение в зоне нарушения.

