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T.S.I.
Tecto Sedi Integrated

A BISCHKE PLOT
HOW DOES IT WORK?

PDVSA

Graphical explanation of the method

A "Bischke plot", also called Δd/d diagram, is a graphical display of differences in depth of the various markers found in two wells (Y axis), plotted against, the depth of the same markers in the reference well (X axis); all depths being true vertical depths (TVD).

Alignment of points in a Bischke Plot indicates that the markers involved belong to series of rock with a similar and regular sedimentation pattern. The interest of the method is the opportunity given to graphically visualize existing breaks in pattern.

An apparent break in trend in a Bischke plot can be attributed to many factors, these include a fault, an unconformity, a non-deposition, a major sequence boundary, a local erosion, or simply a wrong correlation, all of these in either well 1 or well 2. A single Bischke Plot does not indicate in which well the problem lies.

Note that changes in dip associated with fault drag alter the graphical relationship between markers and add hardship to the analysis.

No Fault in either well, normal fault between wells

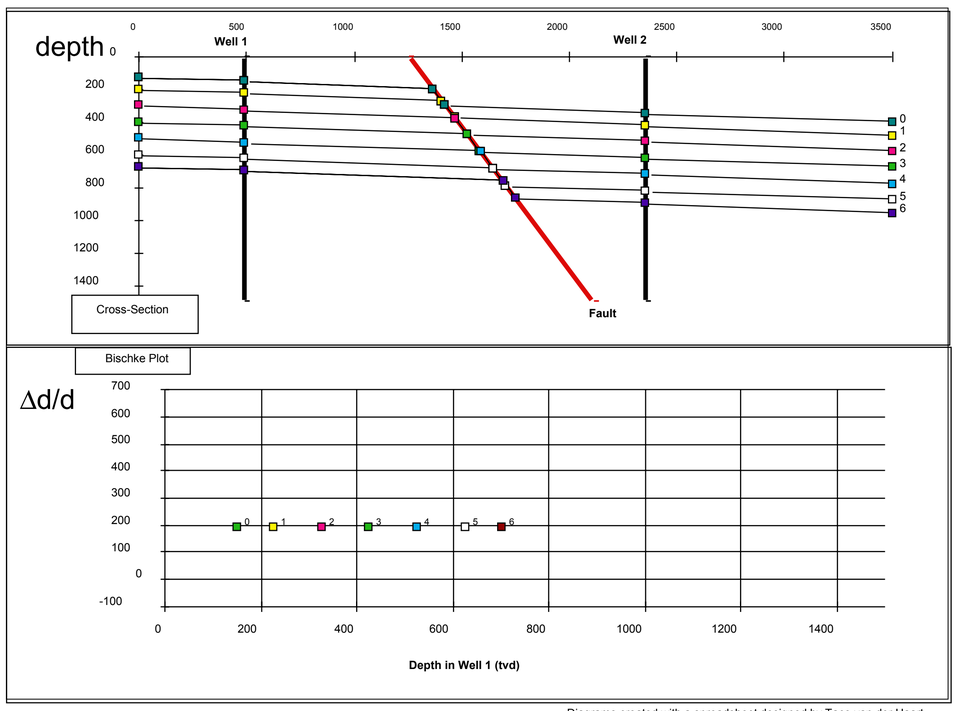

Figure 1 shows that dip alone will not be reflected in a Bischke Plot if it stays constant. It also shows that faults that do not intersect any well will have no direct influence on a Bischke Plot. If a well is sufficiently close to a fault, some of the dips may be accentuated near the fault; that will be seen in the plot as we will have a larger apparent thickness than in the other well.

Unconformity, no Fault in either well, normal fault between the wells

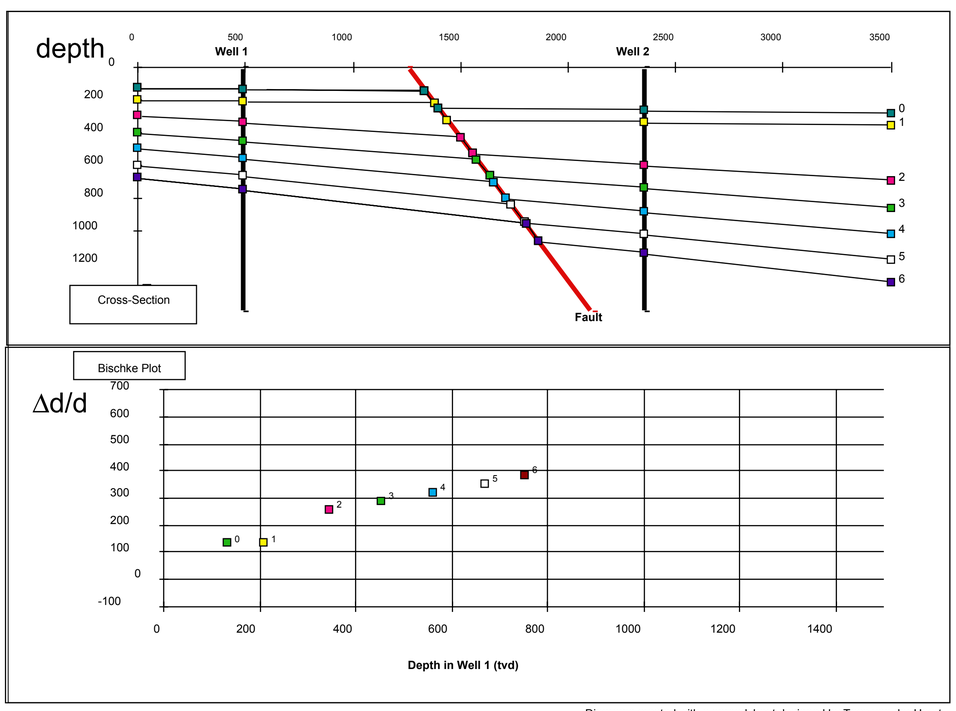

Figure 2 shows a change in slope related to the existence of an unconformity; no fault is present in either of the two wells. Faults that do not intersect any well will have no influence on a Bischke Plot.

No unconformity, Normal fault in well 2

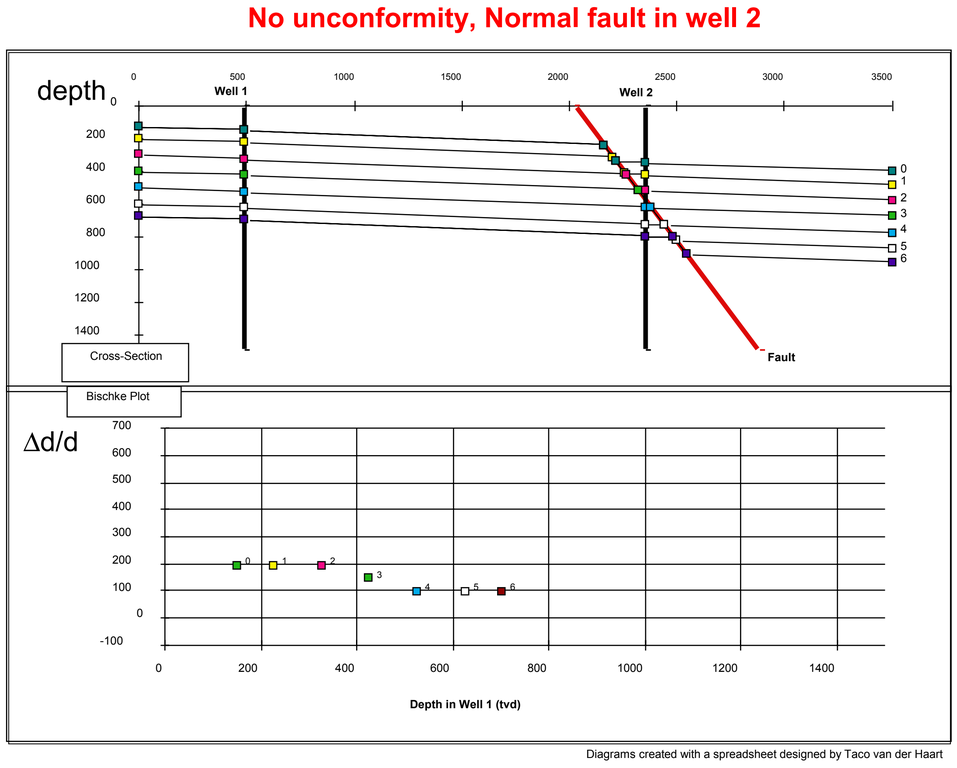

Figure 3 shows two groups of tops (three markers each) that are in line with each other. The green point (marker3) does not fit on one of the two trends because it has a faulted top; thus the encountered top is just apparent top. Some of the dips may be accentuated near the fault; that will be seen in the plot as we will have a larger apparent thickness than in the other well.

Unconformity, Normal fault in well 2

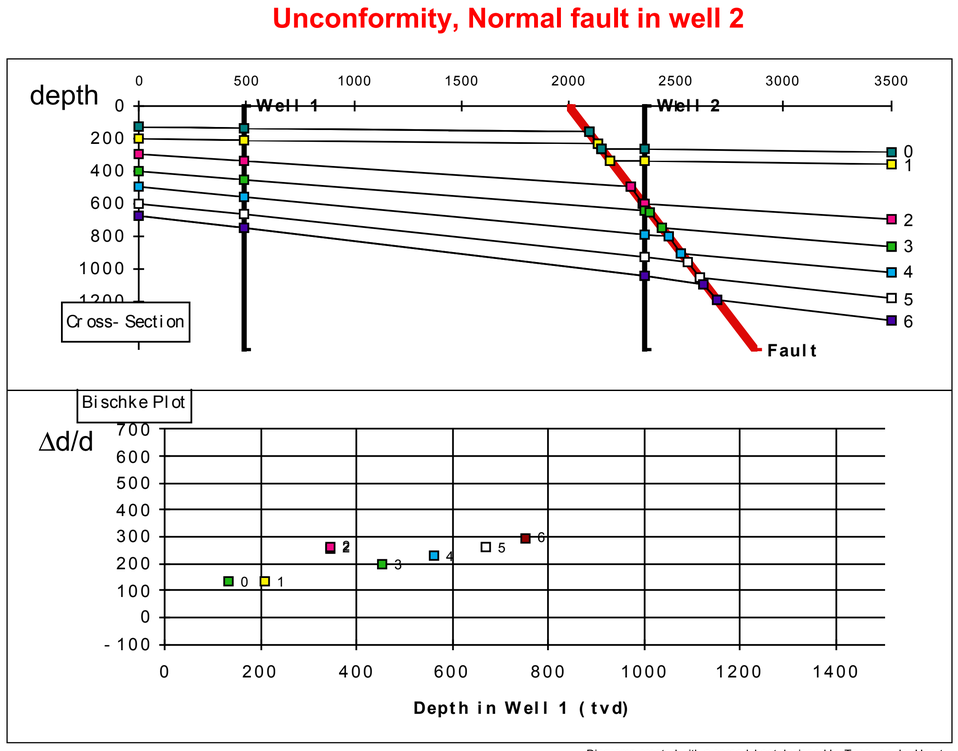

Figure 4 shows what happens with a fault and an unconformity.
In the Bischke Plot the point No 2 (pink) stands out and away from both neighbouring trends. This is because the top has been faulted out and the top encountered is not the true top. The change in slope may be indicative of growth faulting.