

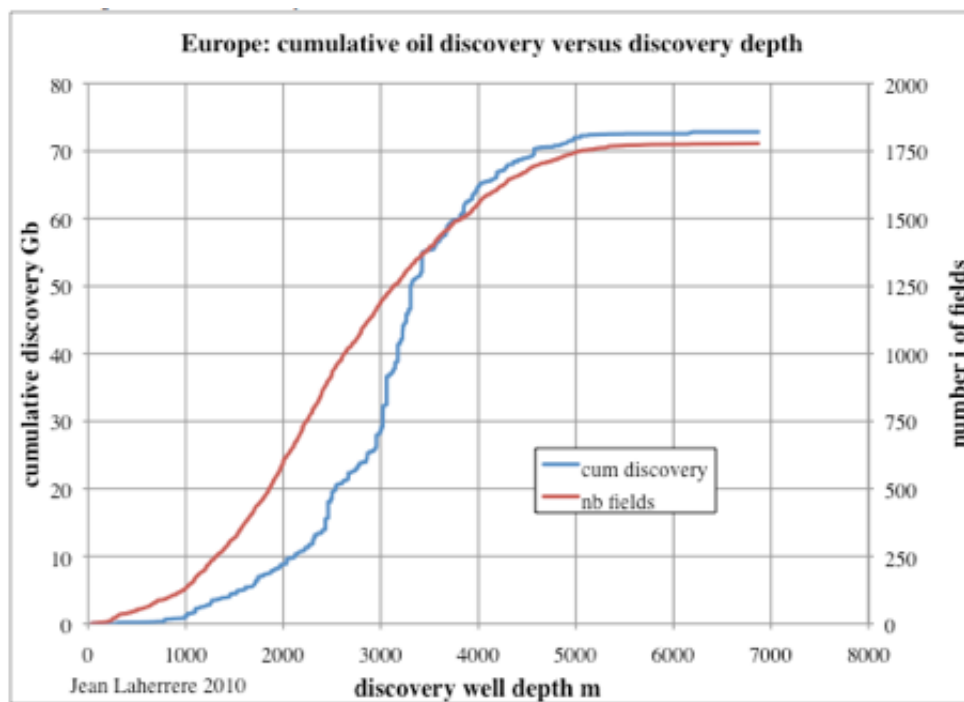
Cumulative oil & gas discovery versus total depth, elevation by continent and for deepwater

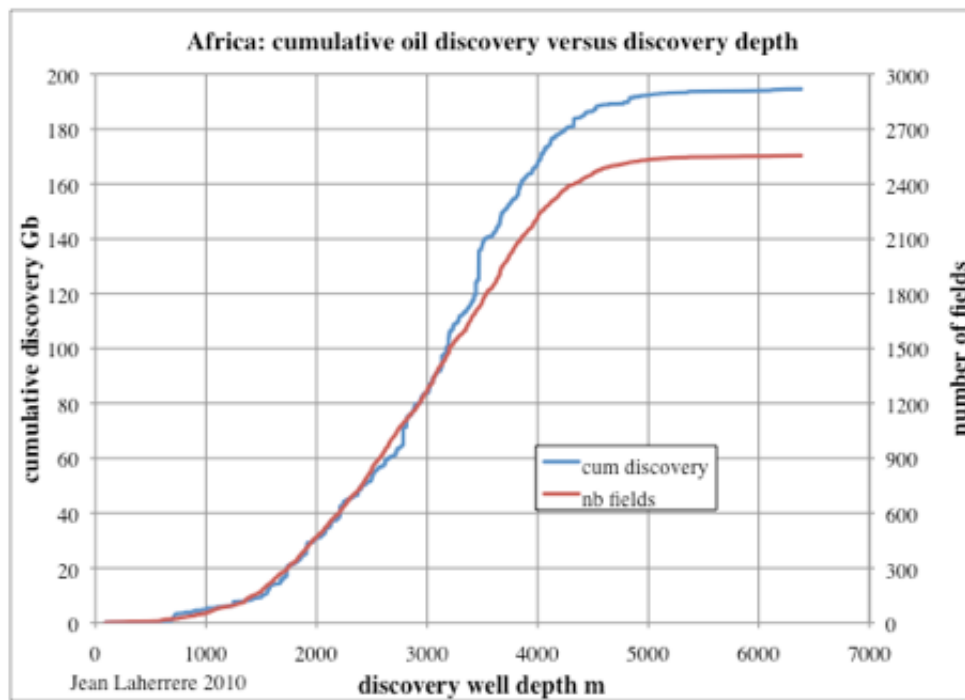
From field reserves data at end 2008 corrected to represent the real 2P, the cumulative oil (including condensate) discovery is plotted

-versus the total depth of the discovery well to recognize the impact of depth with oil reserves.

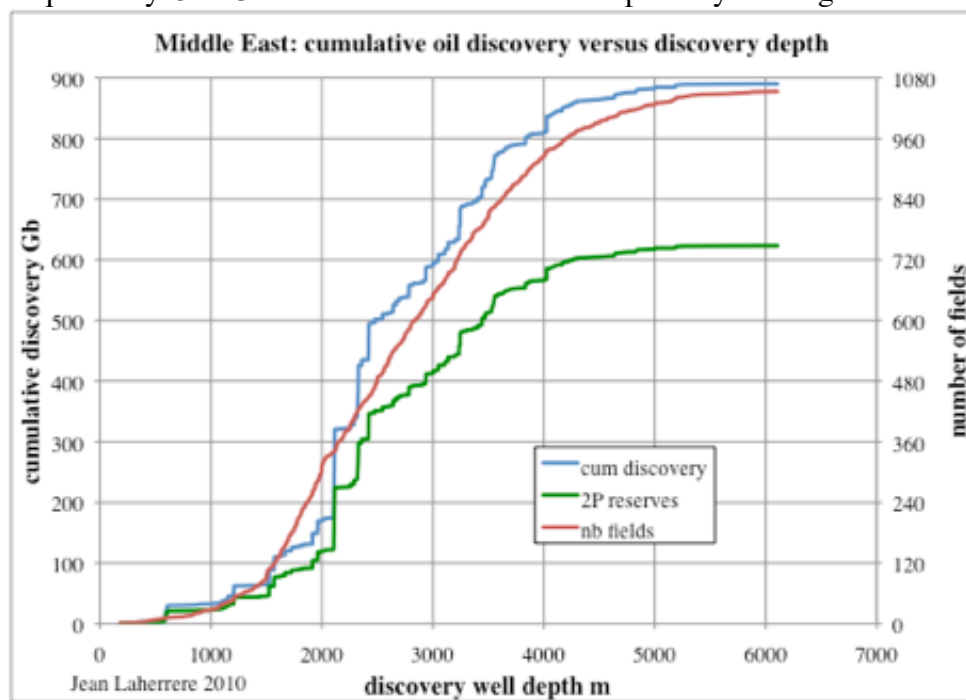
-versus the elevation to recognize the impact of deepwater

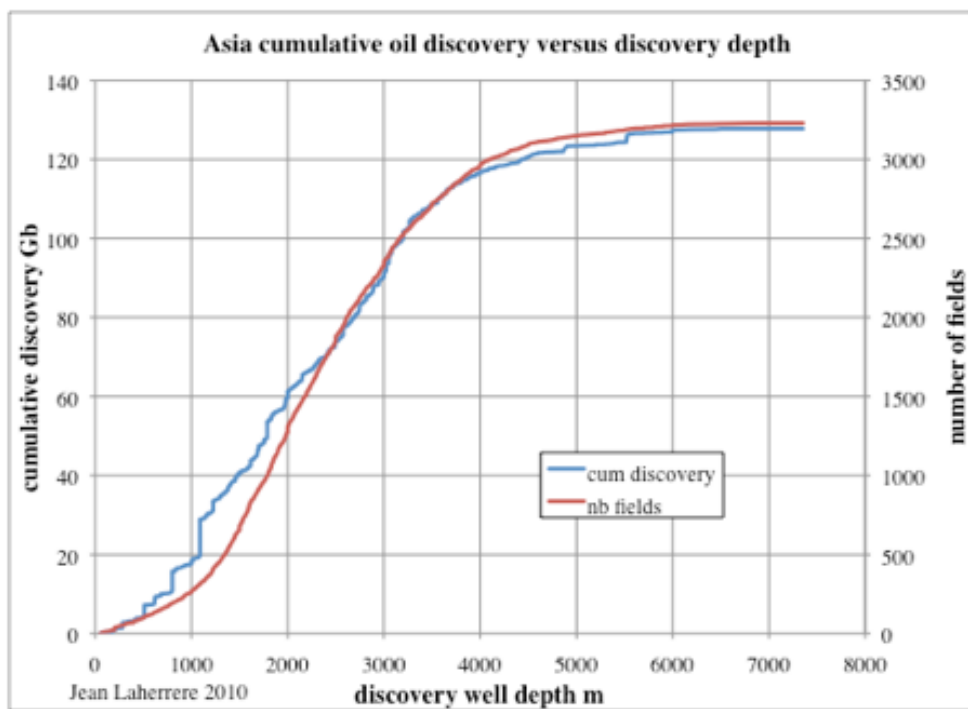
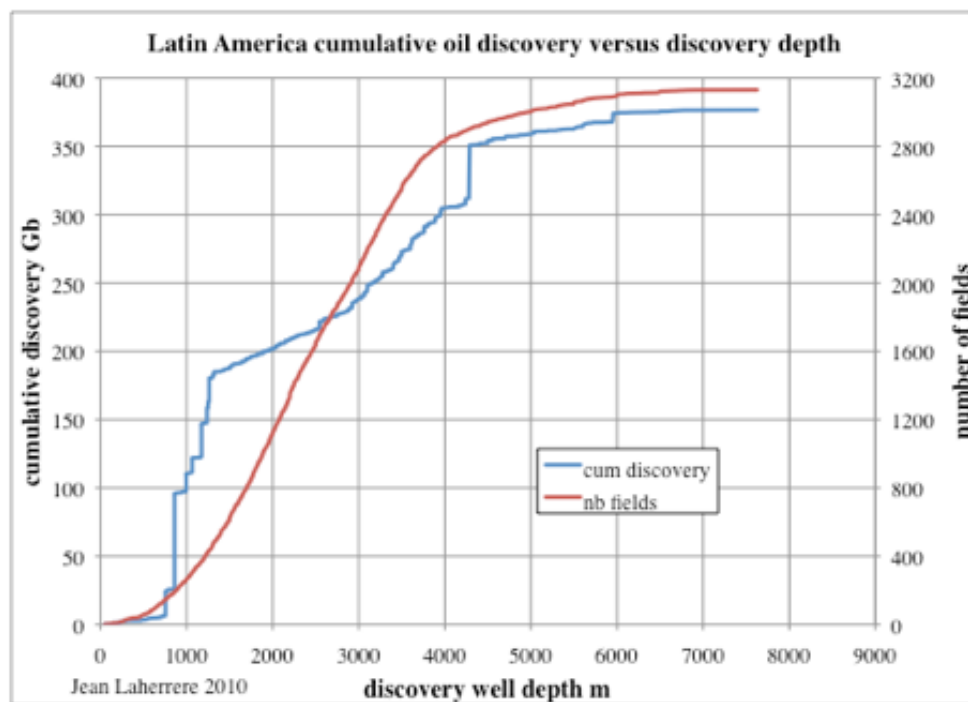
-cumulative oil discovery versus the total depth of the discovery well

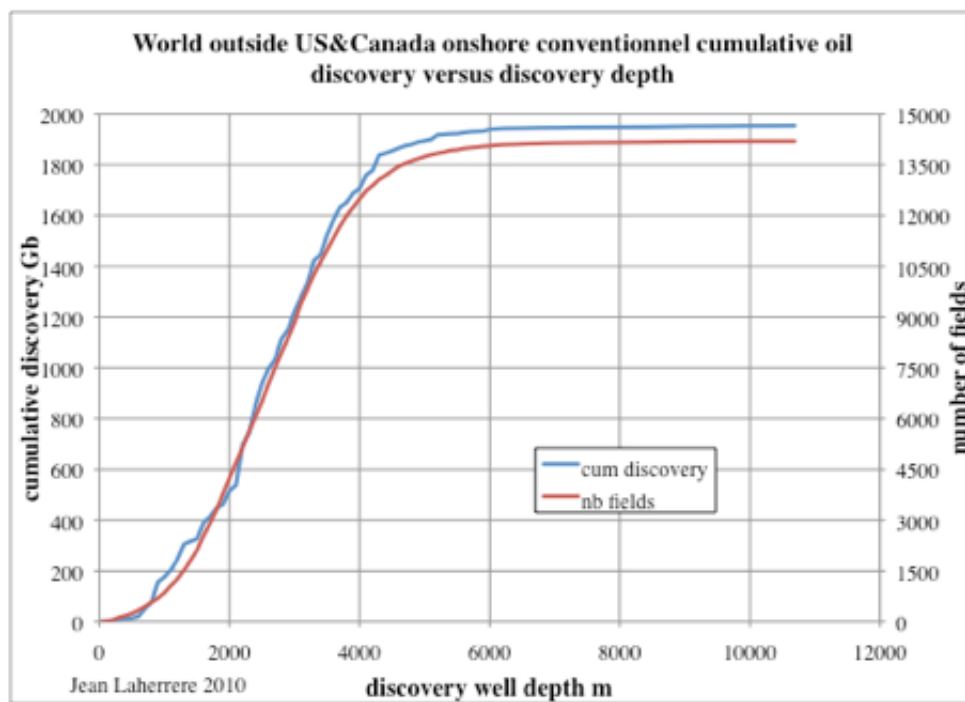
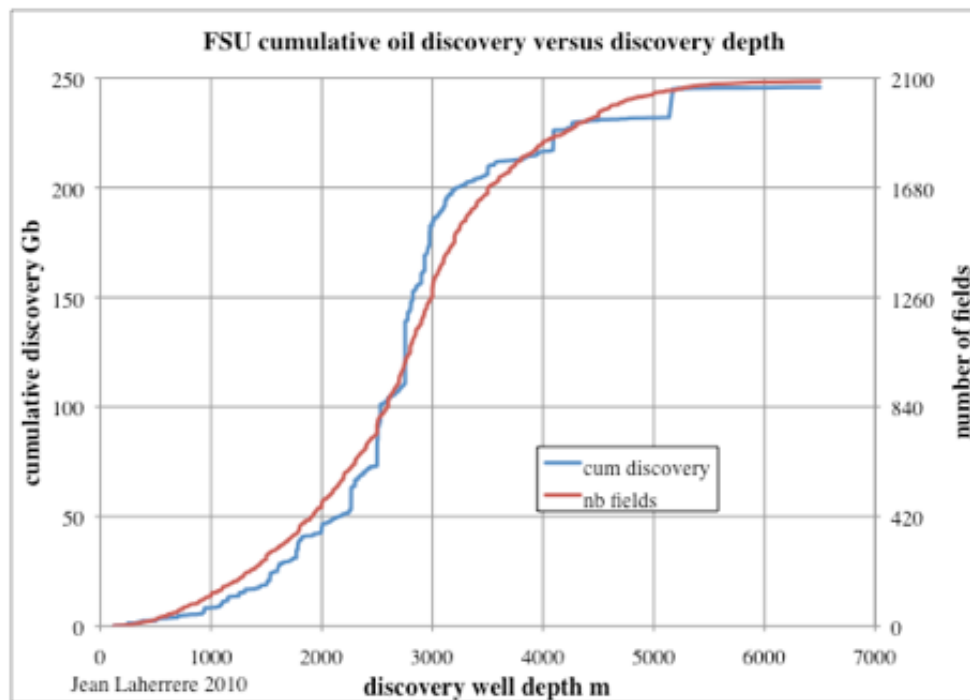




Middle East reserves are overestimated by 300 Gb (speculative resources by Sadad al-Husseini) due to the fight on quotas by OPEC member and should be multiplied by 0.7 to get 2P

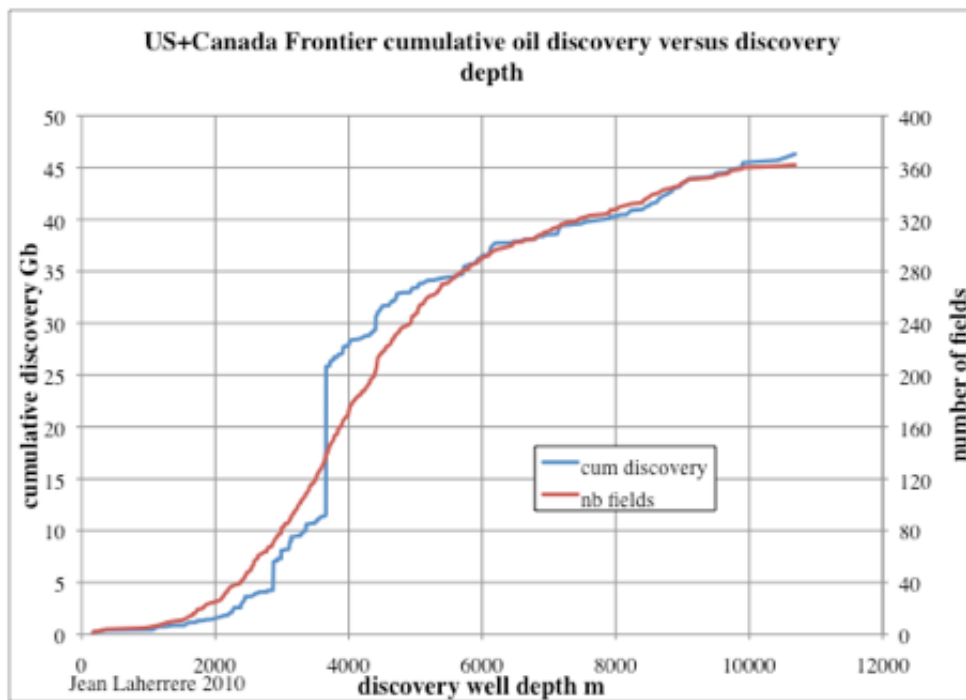






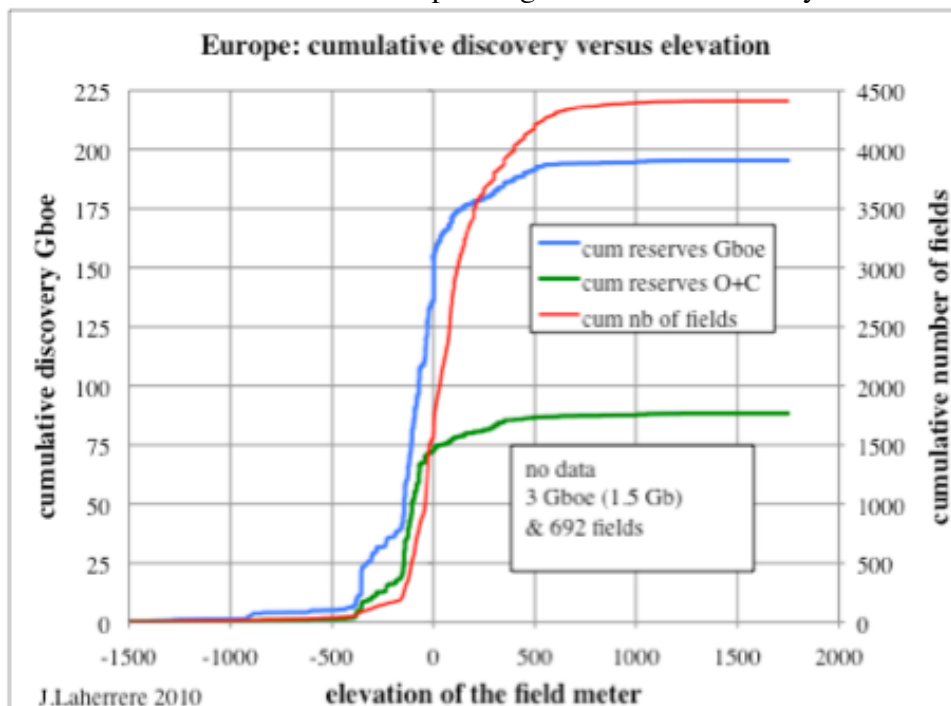
It seems that worldwide there is little potential below 6000 m because it is for most below the oil window, where large temperature convert oil into gas. For the US in the GOM there is still oil potential at 10 000 m for subsalt fields because the large thickness of water and salt allows a lower temperature. It is the same for subsalt oil in Brazil deepwater!

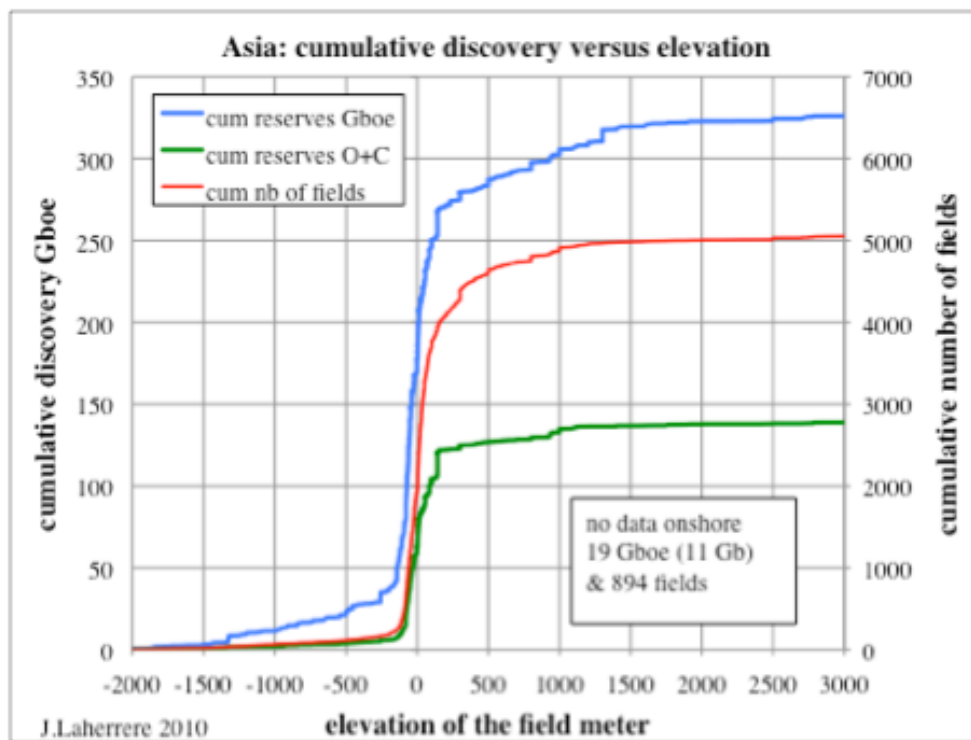
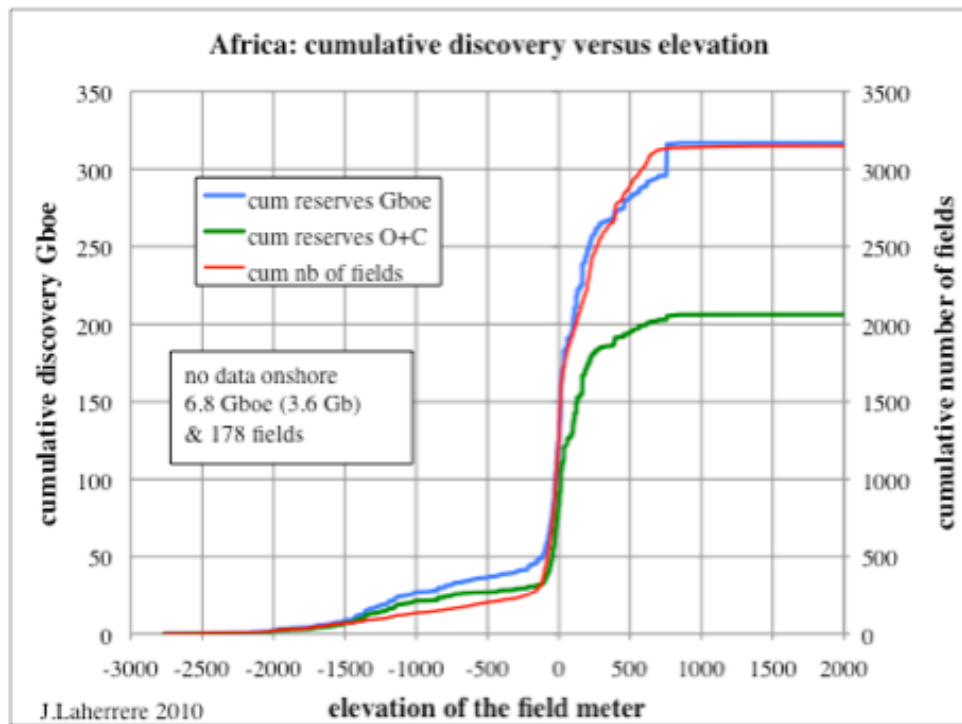
This graph is a good proof that these 15 000 fields contradict the abiogenic oil theory!



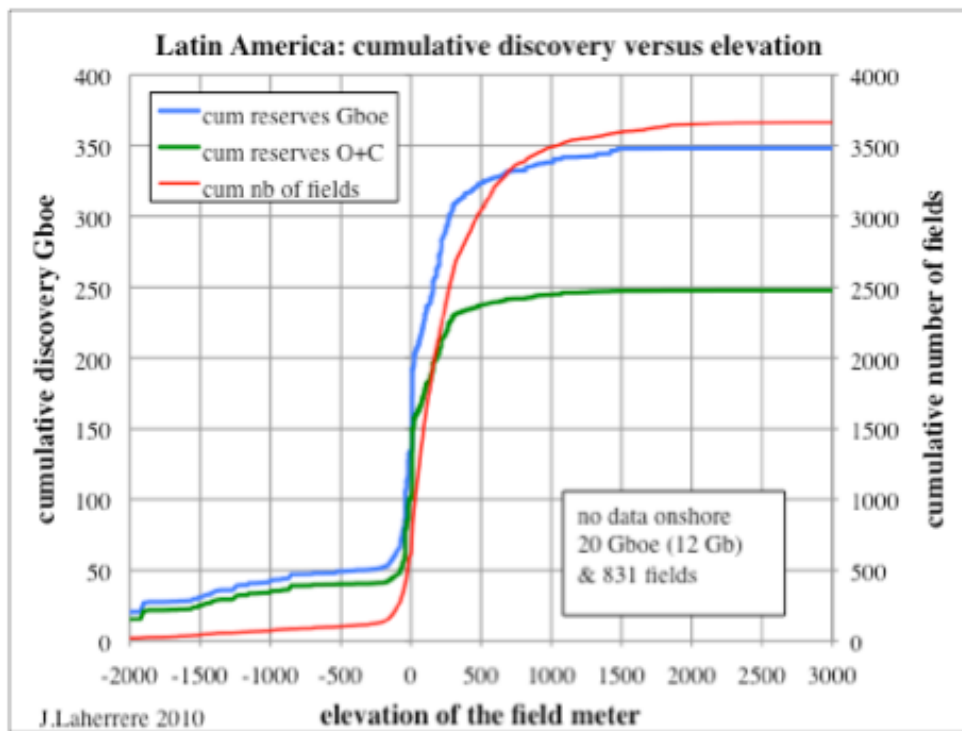
-Water depth and ground elevation of the field

There is a large percentage of fields with elevation data, but few have no elevation data, and the number of no data is indicated with the corresponding cumulative discovery

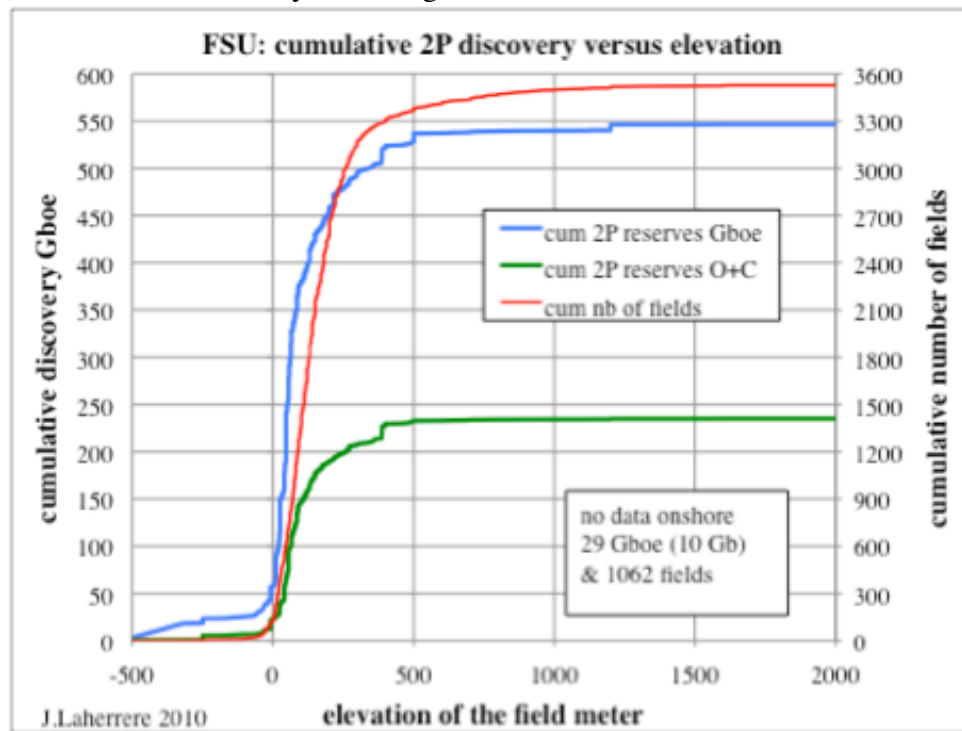




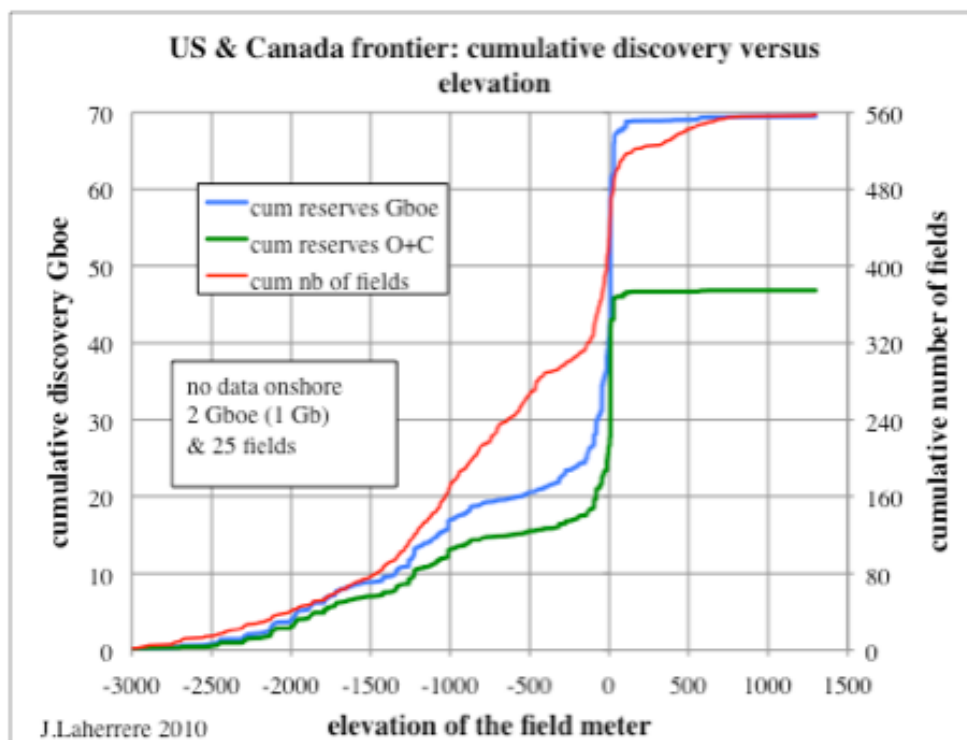
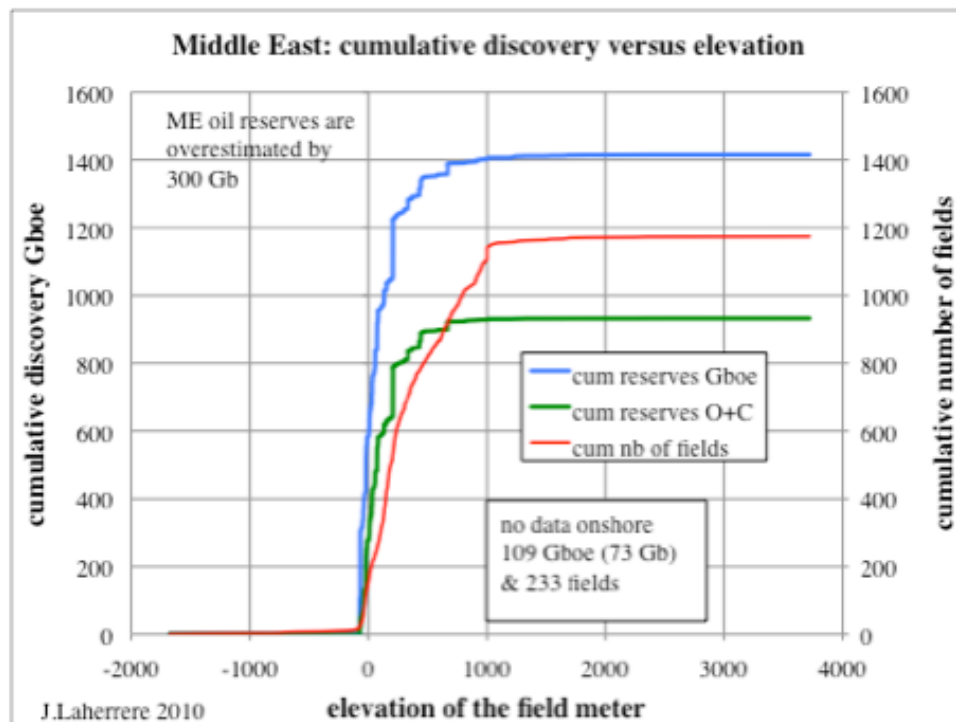
Extra-heavy oil are excluded of the file of Latin America



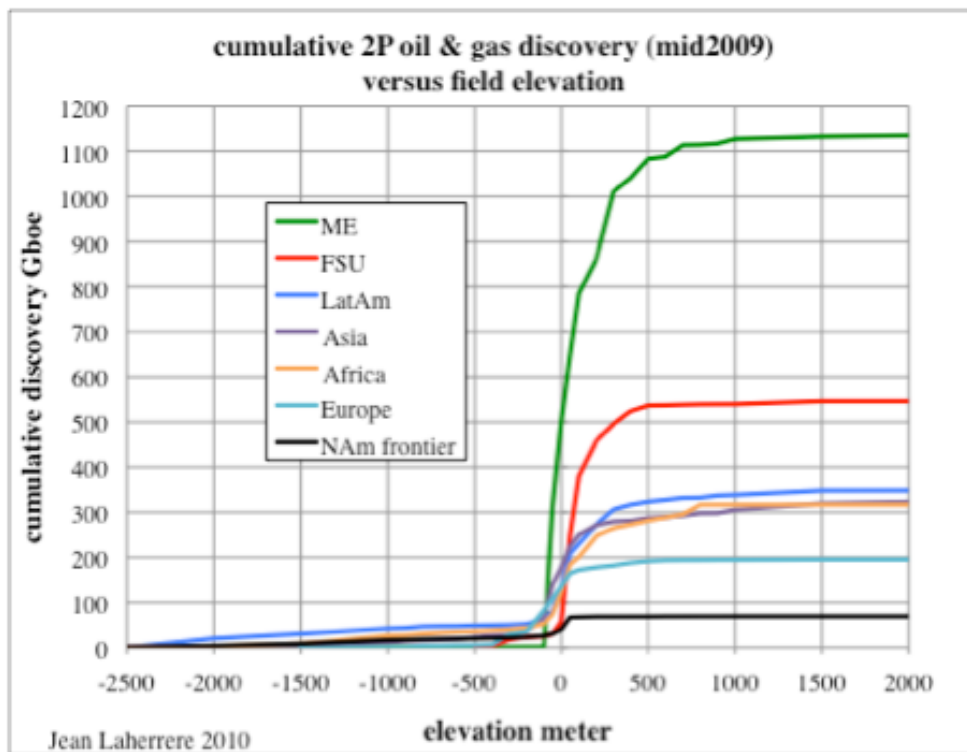
FSU ABC1 data is reduced to 2P by removing 30%



ME oil data should be reduced by 30% to remove the 300 Gb of speculative resources (Sadad al-Husseini)



The oil synthesis per continent

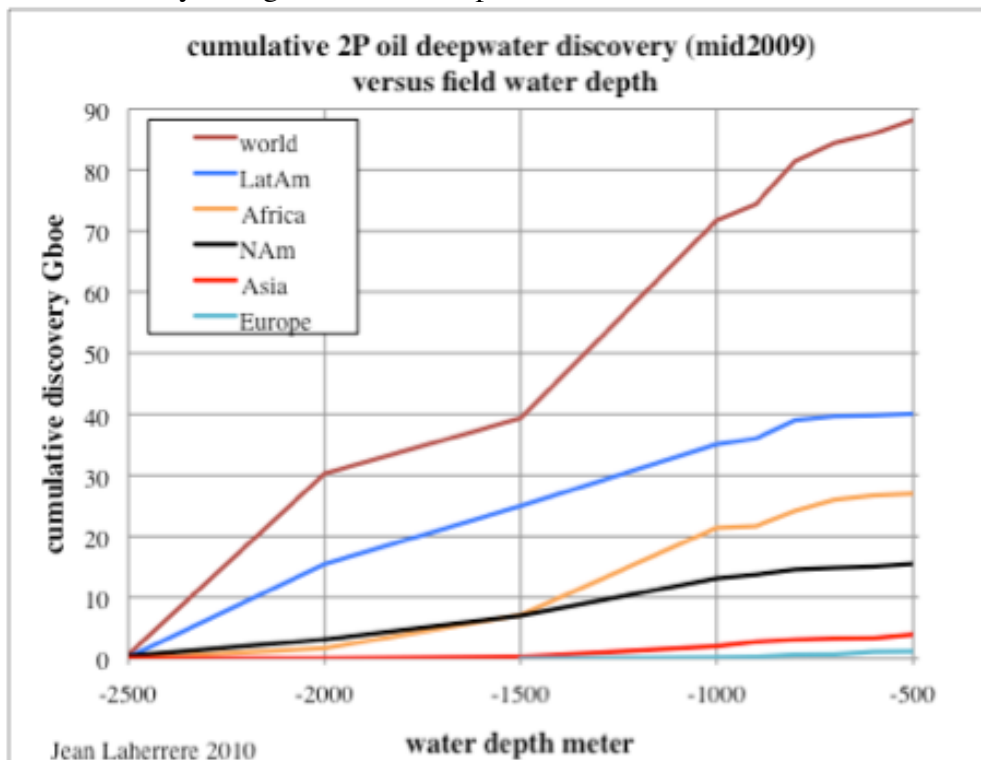


The bulk of the discovery occurs between -200 m and 500 meter

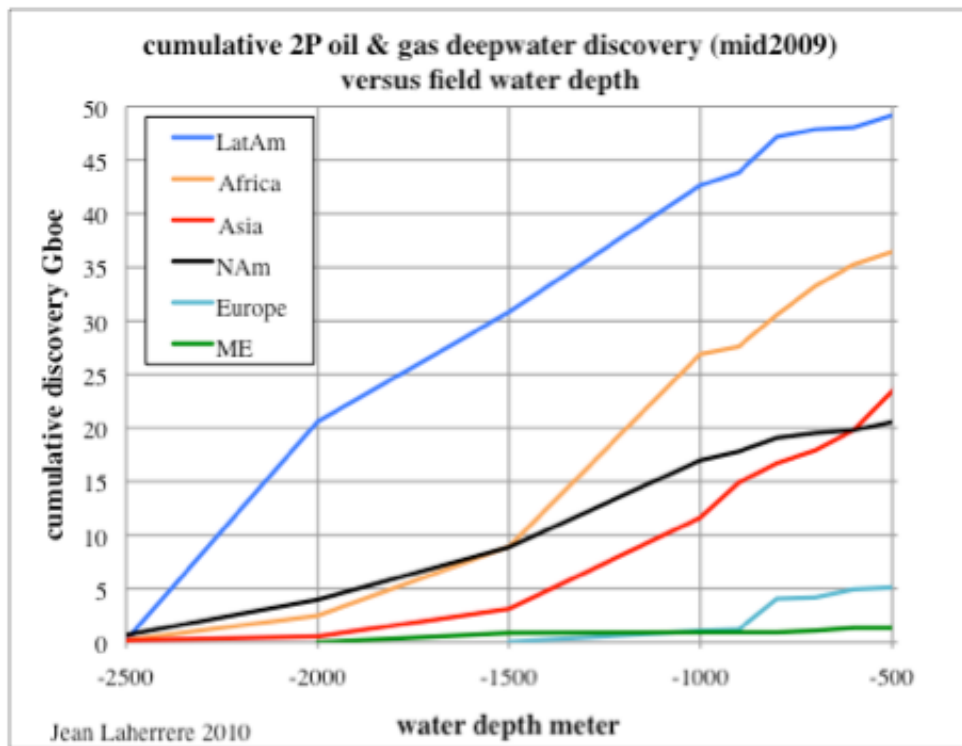
-deepwater (>500 m)

The world cumulative oil discovery between -2500 m and -500 m is at end 2008 at 90 Gb or less than 5% of the total oil crude oil less extra-heavy oil discovery

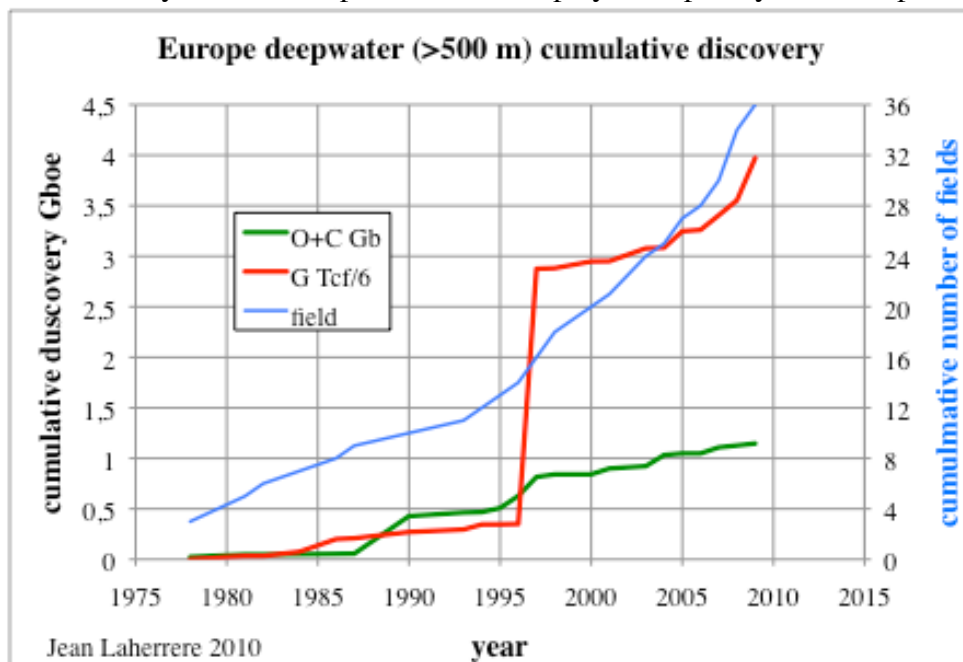
The plot does not show any change with water depth.

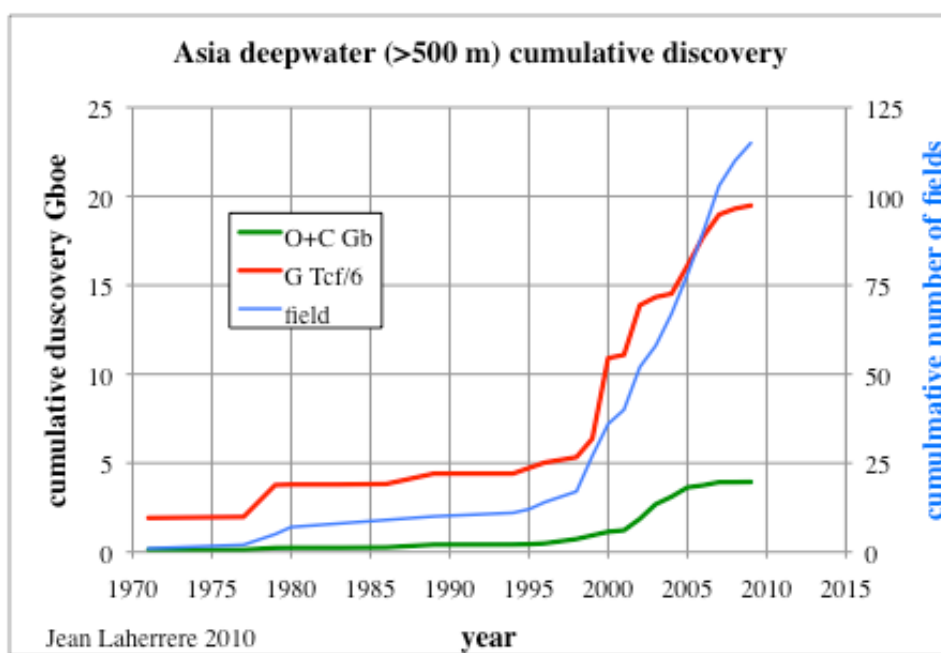
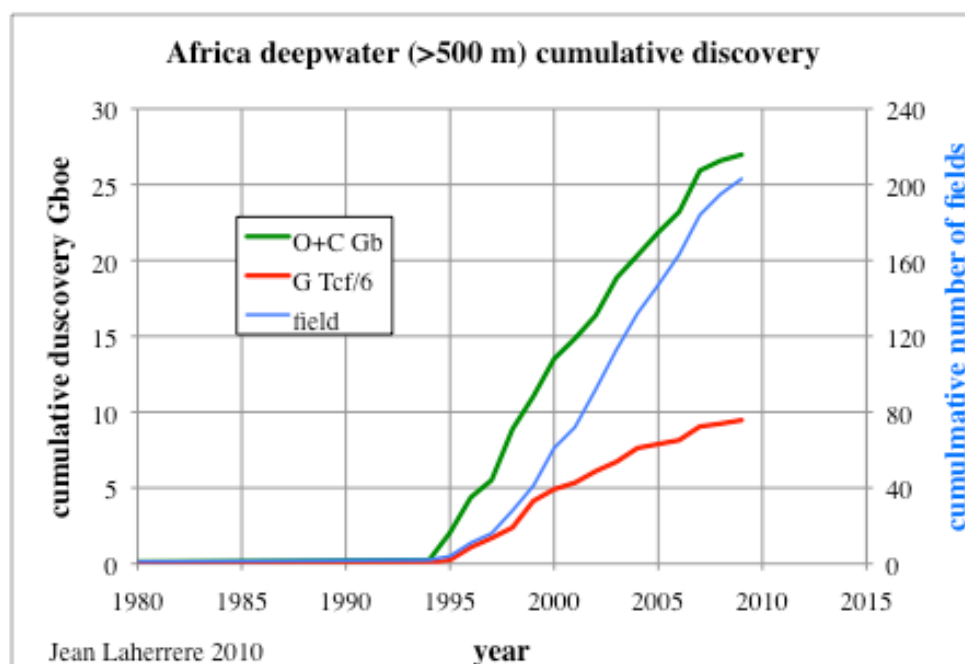


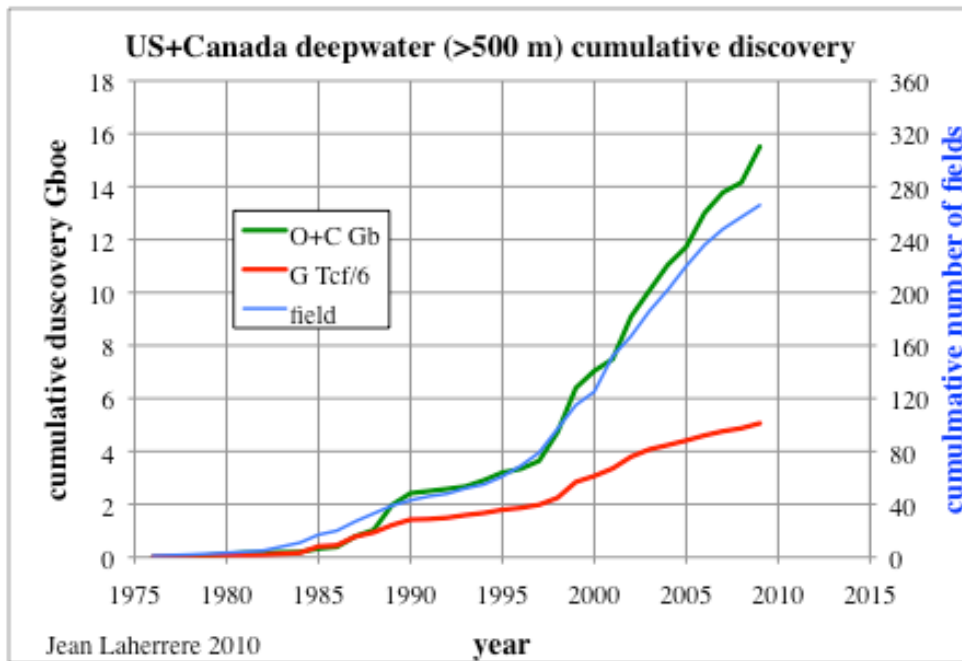
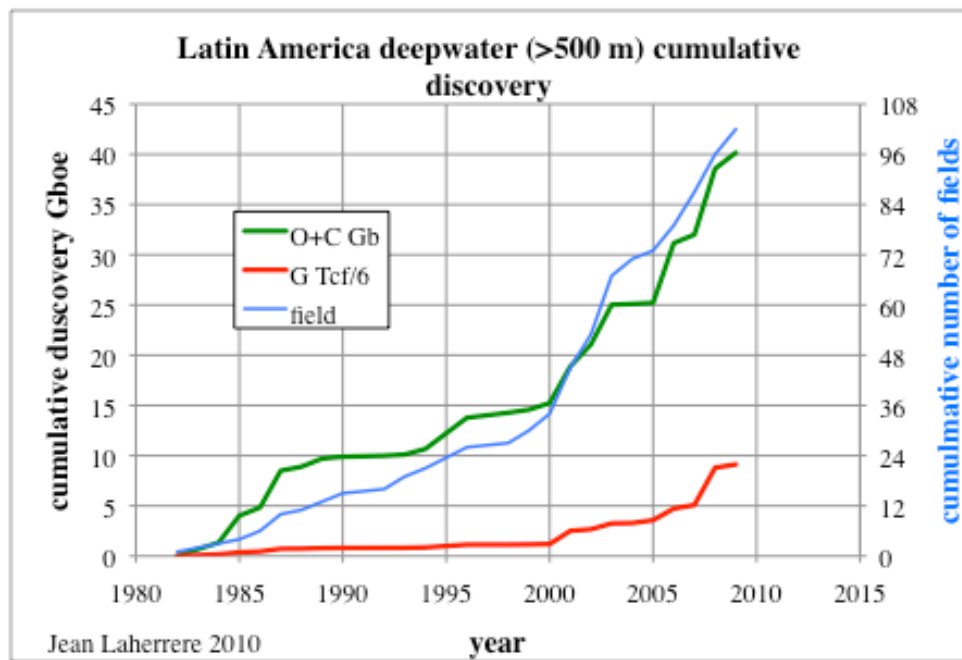
The oil & gas cumulative discovery is similar to the oil discovery



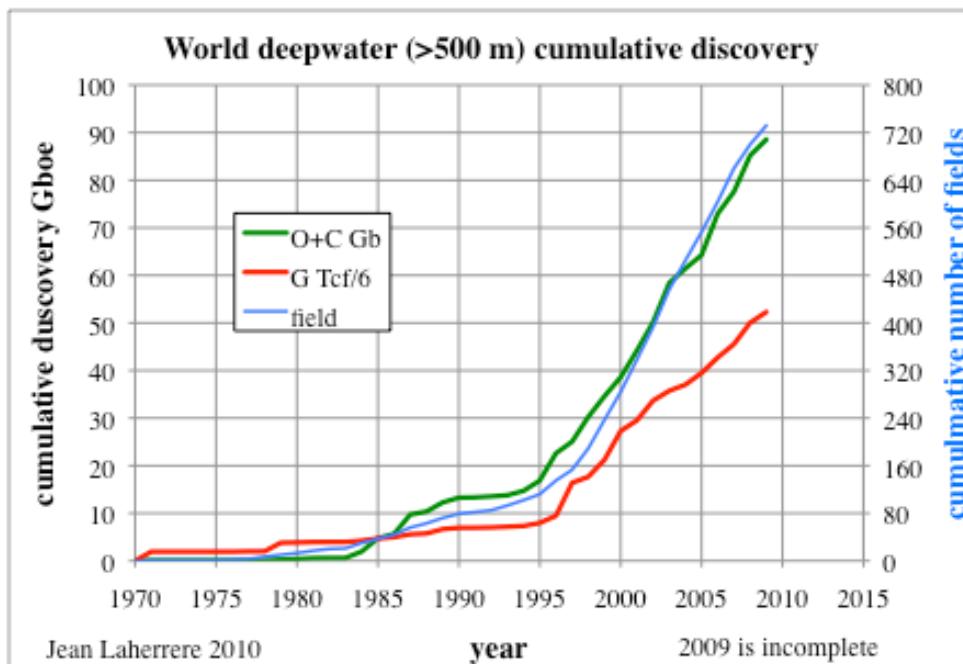
The cumulative discovery versus time per continent displays completely different patterns



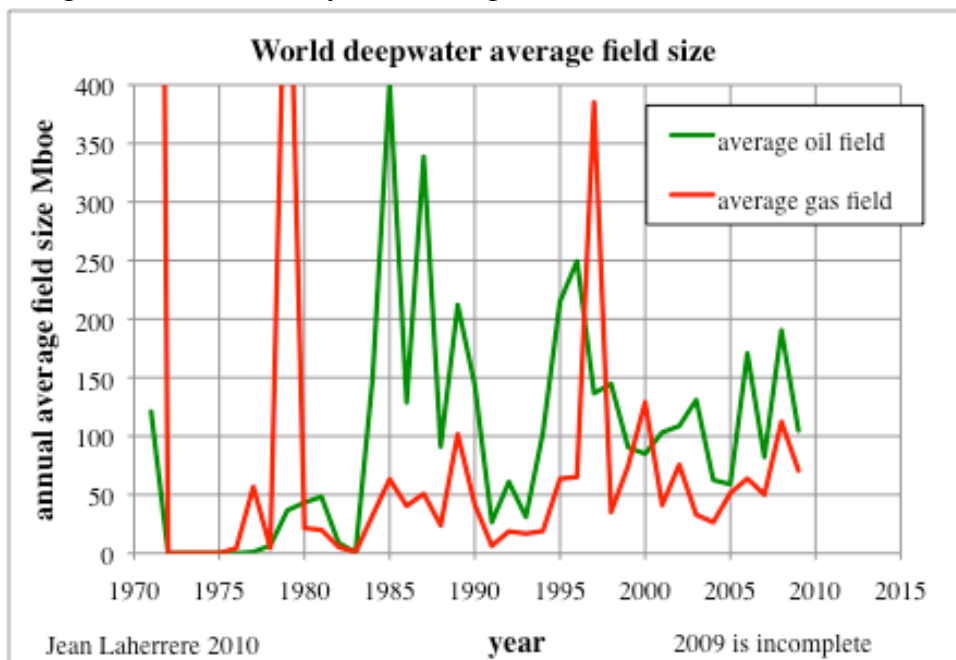




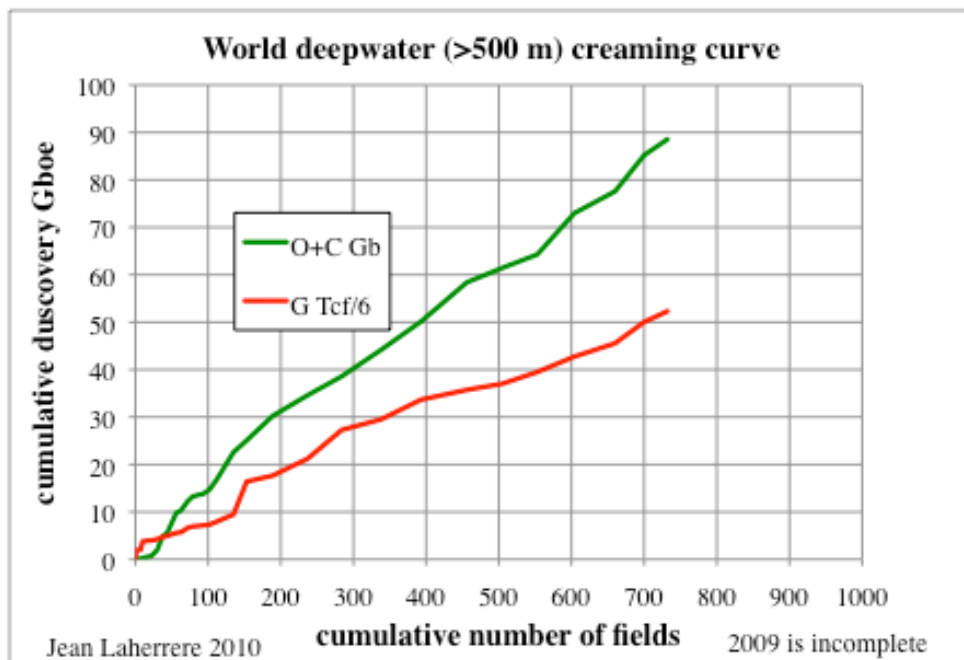
The world deepwater cumulative discovery is about 90 Gb and 300 Tcf and displays a completely different trend since 1995 with a large increase in the number of fields.



The annual average field size shows cycles, but at present about 100 Mb and 0.3 Tcf

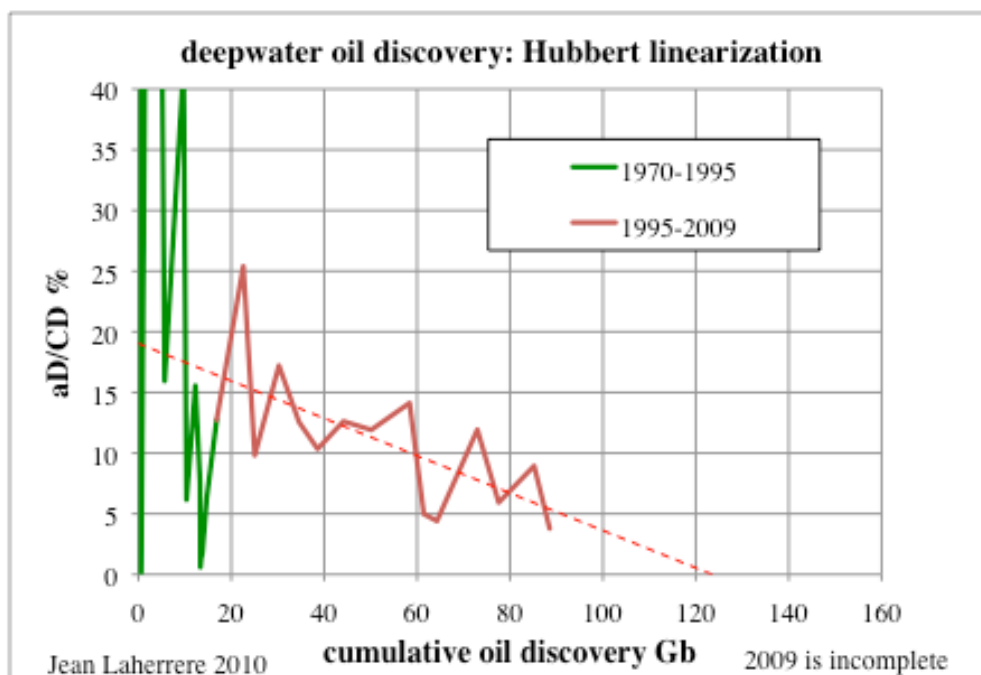


The creaming curve (versus cumulative number of fields) is fairly simple.



The oil cumulative discovery versus the cumulative number of fields displays a constant slope since 200 fields and it seems difficult to extrapolate towards a reliable ultimate

The Hubbert linearization from 1995 to 2009 trends towards over an ultimate of 120 Gb, but the subsalt exploration has just started



-Conclusions

The cumulative oil discovery versus the depth of the discovery shows that the bulk occurs between 500 m and 5000 m

The cumulative discovery versus the elevation shows that the bulk occurs between -200m and 500 m

The cumulative discovery for deepwater is presently 90 Gb with an ultimate between 120 and 150 Gb.