



## **An approach for computing coordinates transformation parameters between WGS84 and North Sahara.**

**N. Kheloufi(1), A. Zeggai(1), S. Kahlouche(1), R. Ait Ahmed Lamara(1), S. Ghezali(1)**

(1) Space Technics Center, Bp 13 Arzew 31200 Oran, Algeria, (kheloufi2006@hotmail.com/  
Fax: +213 41473665)

The global transforms models (Bursa -Wolf, Molodensky-Badekas) are the famous method used to compute transformation parameters between geodetic systems.

In our case (Algeria) , these models are not most appropriate to give a good accuracies, because the information about local geoid above ellipsoid Clarke 1880 is not available. The two dimension models such as geodetic lines, multiple regressions, plane similitude..., gives best results.

That's why we hold to use a new approach using a limited area ("zoning" approach) and it consist to delimit our huge territory into little zone (nearly 25x25 km)in order to apply three dimension models (Bursa-Wolf, Molodensky-Badekas) , in this case we can avoid great geoid undulation which generate errors on computation of parameters and can thus improve accuracy.

These parameters while computed can be used to transform a new point over the entire zone, and the results are validated by a computation program called TRANSFOR.

In this programm we implement different zoning radius varied between 25 and 200 km and we compute for such radius the transformation parameters and their standard deviation, thus we can evaluate variation ratio over these parameters according to zone dimension.

That is why this approach shows that the delimitation of study zone can avoid errors due to geoid undulation, we can thus encounter the geoid miss knowing wish is a

major problem for geodetic survey in Algeria.