



## Accuracy of Geometric Geoid Model of Singapore using RTK Heighting

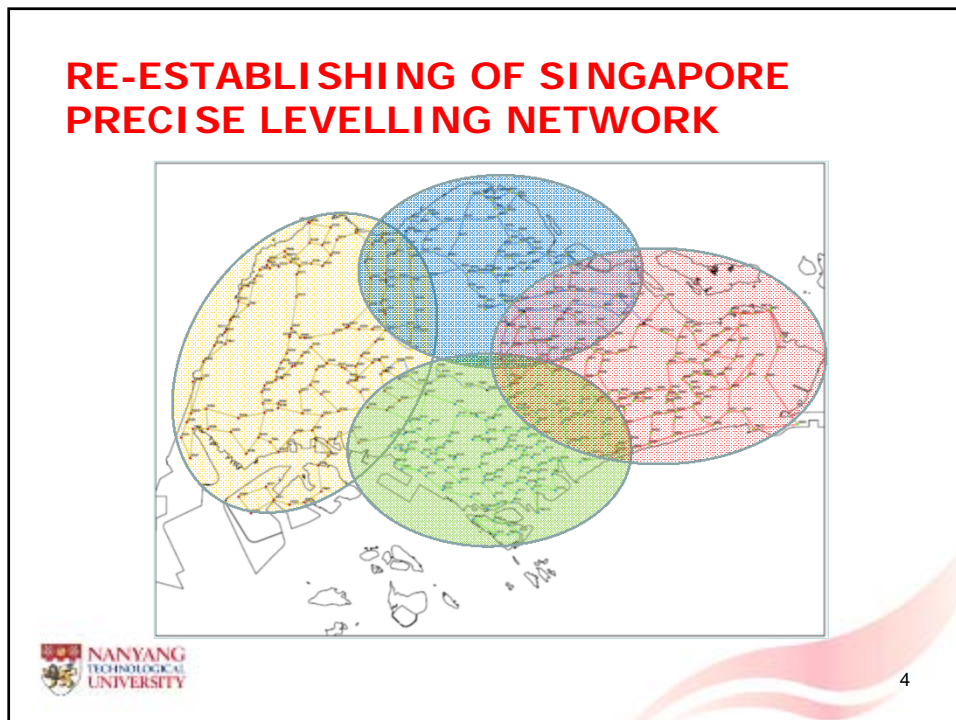
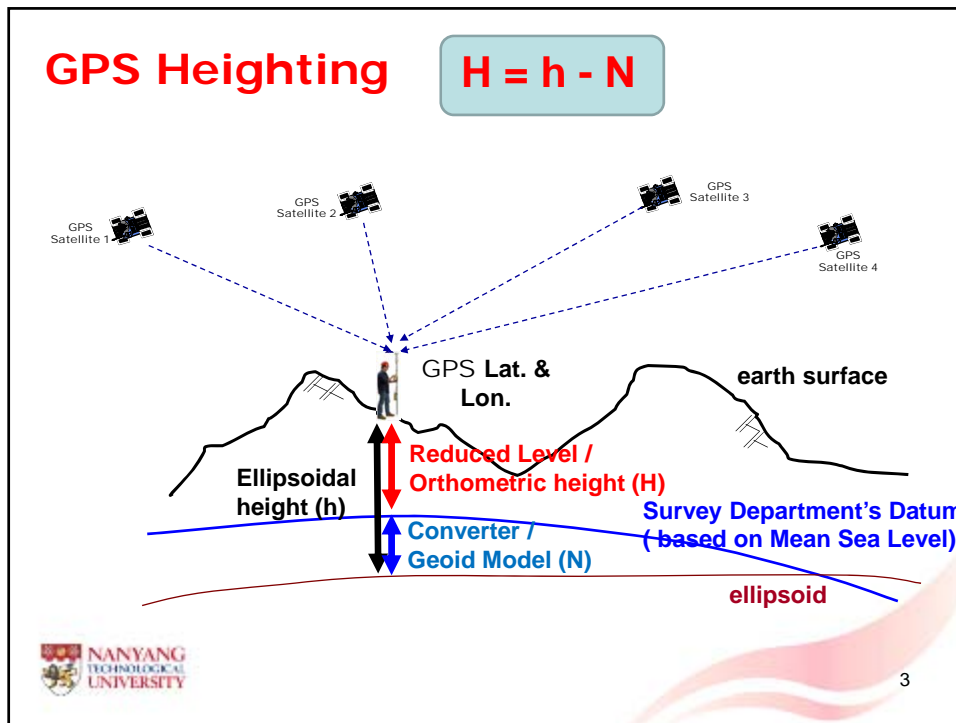
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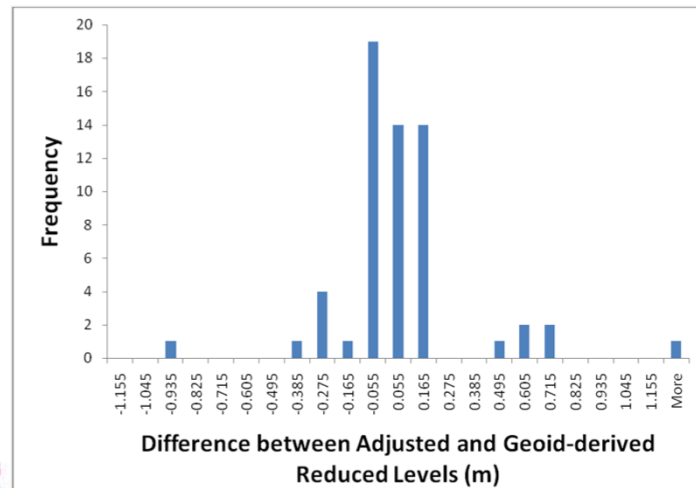
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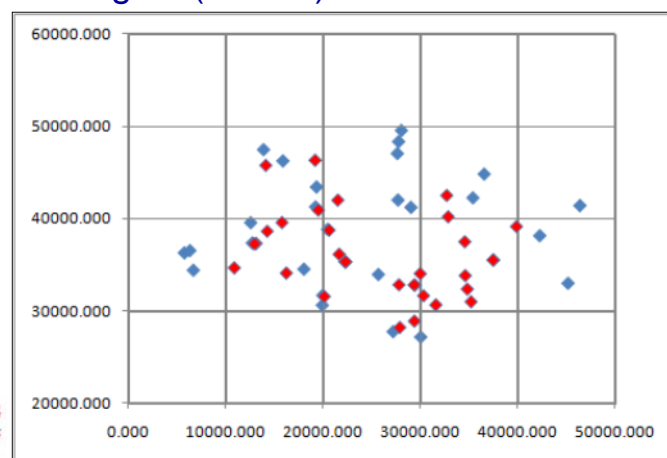
**464** PLBMs used in geoid computation but  
**58** of the PLBMs with RTK ellipsoidal heights  
 are not able to fit in!



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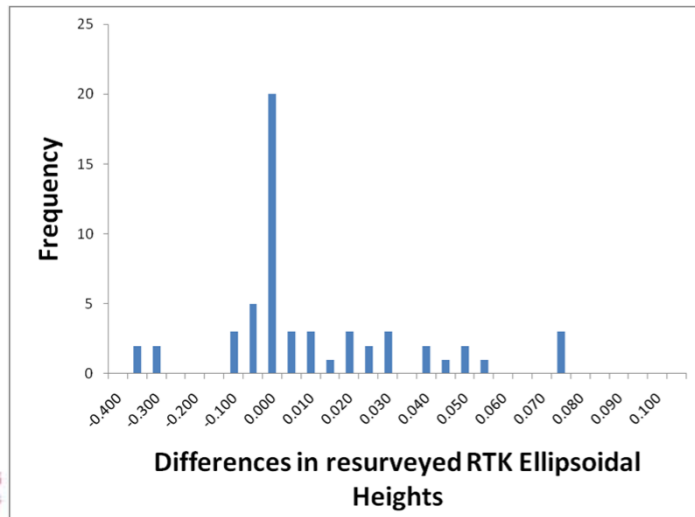
### Spatial distribution of 2 sets of Check BMs:

1. The resurveyed 58 problematic benchmarks with revised RTK procedure (in red)
2. 26 BMs with post-processed and 6 BMs with RTK ellipsoidal heights (in blue)



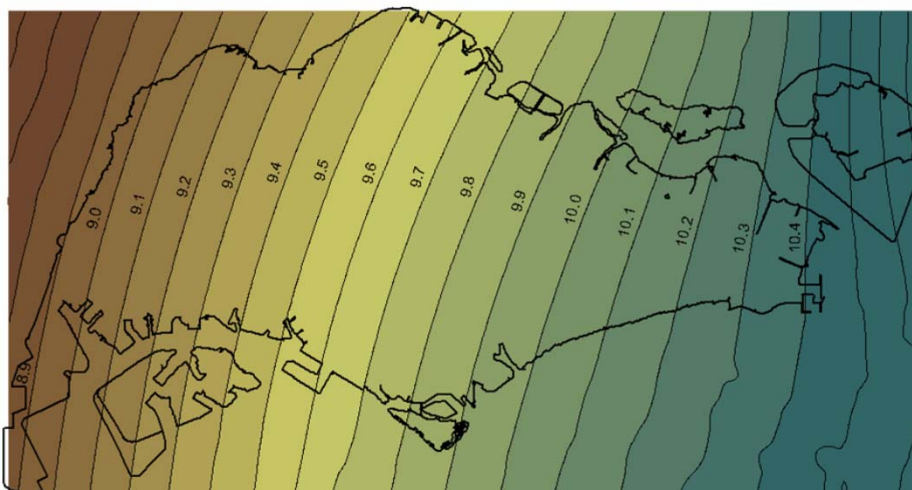
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## Results of the Resurveyed 58 problematic benchmarks



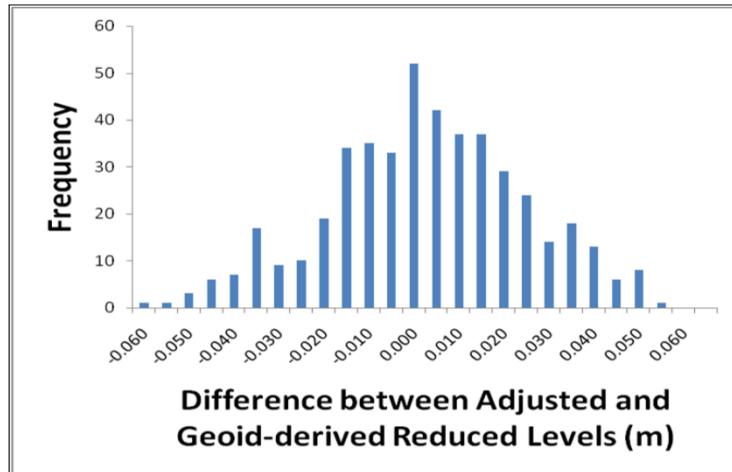
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## SGeoid09 - "Geoid Model" or Converter for Singapore



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## Verification of SGeoid09



Using multiple regression forward stepwise method, RTK heighting and the precise levelling, it is able to achieve accuracy to within  $\pm 0.030$  m,  $\pm 0.040$  m and  $\pm 0.050$  m for 82%, 95% and 99%, respectively, of the sampled data.



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### SGeoid09

This function allows you to perform conversion of Ellipsoidal height to reduced level height for Survey Department's datum.

Step 1 of 2

To specify SVY21 Coordinates and WGS84 Ellipsoidal height

Northing (m) :  (Min 15910.449 - Max 49582.511)

Easting (m) :  (Min 4847.297 - Max 55634.474)

Ellipsoidal Height (m) :



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## Recommended Procedure for RTK Heighting

- Recommended to perform 5 separate initializations and to acquire 3 readings in each, i.e. minimum of 15 reading in all, for each benchmark



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## Conclusions

- The SGeoid09 is suited in engineering applications which can accommodate  $\pm 5$  cm uncertainty in the height

END



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