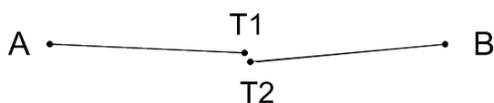
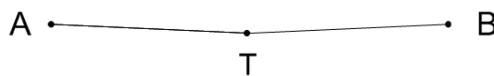


A Principle for Determining the Optimum Surveying Accuracy

Gary Zhang

1

Surveying Accuracy: Tunnel Surveying Example



2

Better Accuracy?

- $CS2 - CS1 < E1 - E2$ (1)
 - CS1: Cost of surveying for Accuracy α_1
 - CS2: Cost of surveying for Accuracy α_2
 - E1: Cost to address the Delta for α_1
 - E2: Cost to address the Delta for α_2
- $CS2 + E2 < CS1 + E1$ (2) α_2 is better
- **(CS + E) is minimized** (3) Optimum Accuracy!

3

Conclusion

- The optimum accuracy for the same surveying project will vary from place to place due to the fluctuation of the various costs (equipment, labour, construction methods, etc.)
- This principle should be included in every surveying text book.

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