APG3013F Assignment 2: Parametric adjustment

Assigned on: 8 May 2017

Write a program to adjust a traverse by parametric least squares. The program should:

1. Read a point file and an observation file. The point file will contain the control points. The Observation file will contain the traverse observations (as shown in the practical).
2. Appropriately restructure the data from the point and observation file in preparation for the least squares adjustment.
3. Adjust the traverse by least squares
4. Output the 'formatted' results of the adjustment to a file. The output should include (but is not limited to), the coordinates of the points, the precision of the points, the residuals of the observations, the adjusted observations, the results obtained with each observation.
5. Plot the traverse in matplotlib. Display the rms of each point using circles.

Your program should be able to handle traverses of varying complexities.

Submissions:

You are to submit a report containing:

1. An explanation of how you adjusted the traverse
2. Sample results
3. The python code

Zip all your files and place them in your vula drop box. The zip file should be named Assignment2_FirstName_Surname.zip