

## GEOP 315 - Fall 2017 - Homework Assignment # 2 - (Due date: 15/10/2017)

Given the attached MS-Excel Worksheet:

1. Fit polynomials of increasing orders (from 2-6) to the true  $T^2$ - $X^2$  curve for the first layer. (10 points)
  - a) Estimate  $V_S$  in the five cases. (10 points)
  - b) Estimate  $V_1$  in every case. (10 points)
  - c) Calculate  $E_V(\%)$  between the estimated  $V_1$  values and the true value of  $V_1$  found in the model parameters spreadsheet. (10 points)
  - d) How does  $E_V(\%)$  change with polynomial degree? Why? (10 points)
  
2. Fit polynomials of increasing orders (from 2-6) to the true  $T^2$ - $X^2$  curve for the second layer. (10 points)
  - a) Estimate  $V_S$  in every case. (10 points)
  - b) Estimate  $V_2$  in every case. (10 points)
  - c) Calculate  $E_V(\%)$  between the estimated  $V_2$  values and the true value of  $V_2$  found in the model parameters spreadsheet. (10 points)
  - d) How does  $E_V(\%)$  change with polynomial degree? Why? (10 points)

$$E_V(\%) = \frac{|V_{est} - V_{true}|}{V_{true}} \times 100$$