

ELEC 4700
Assignment 2
Finite Difference Method

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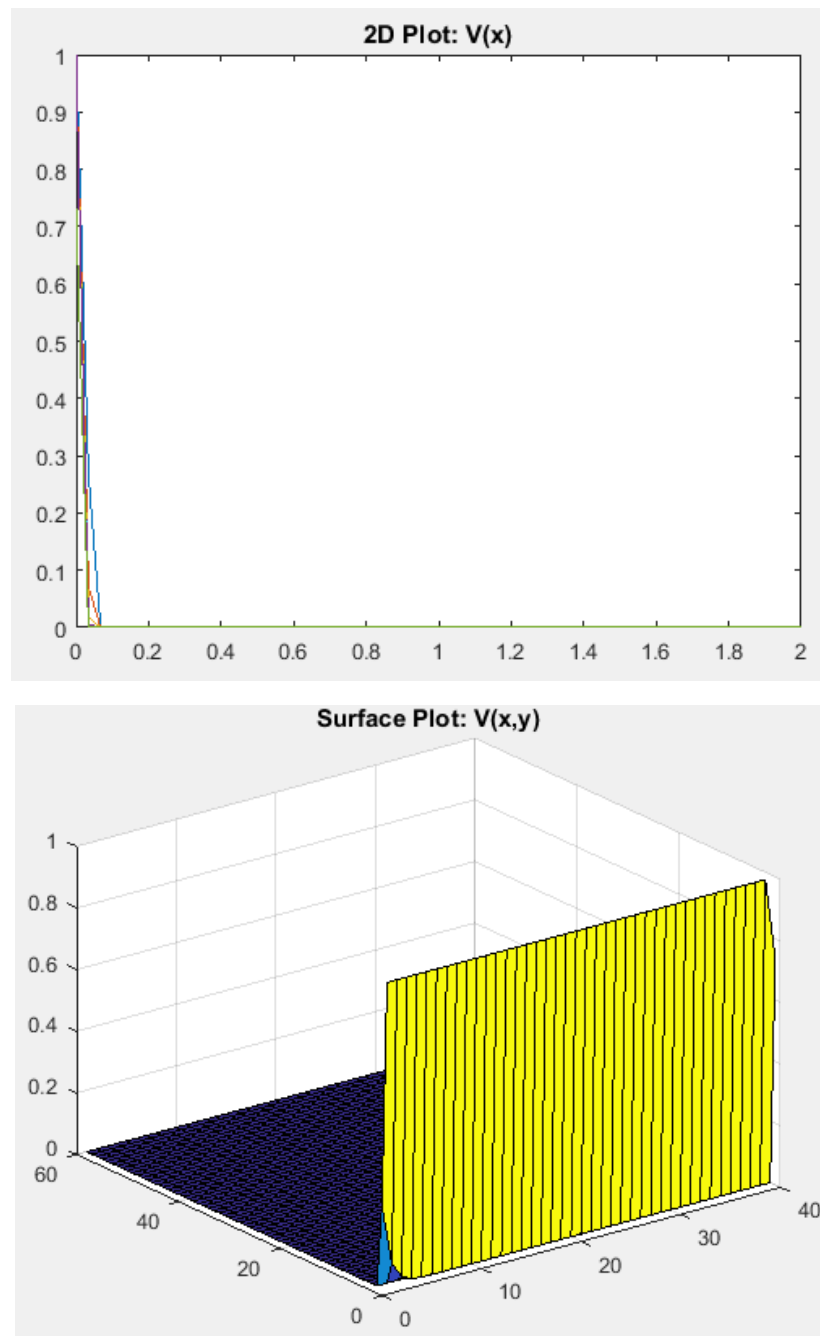
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Feb 23, 2020

1. Electrostatic Potential

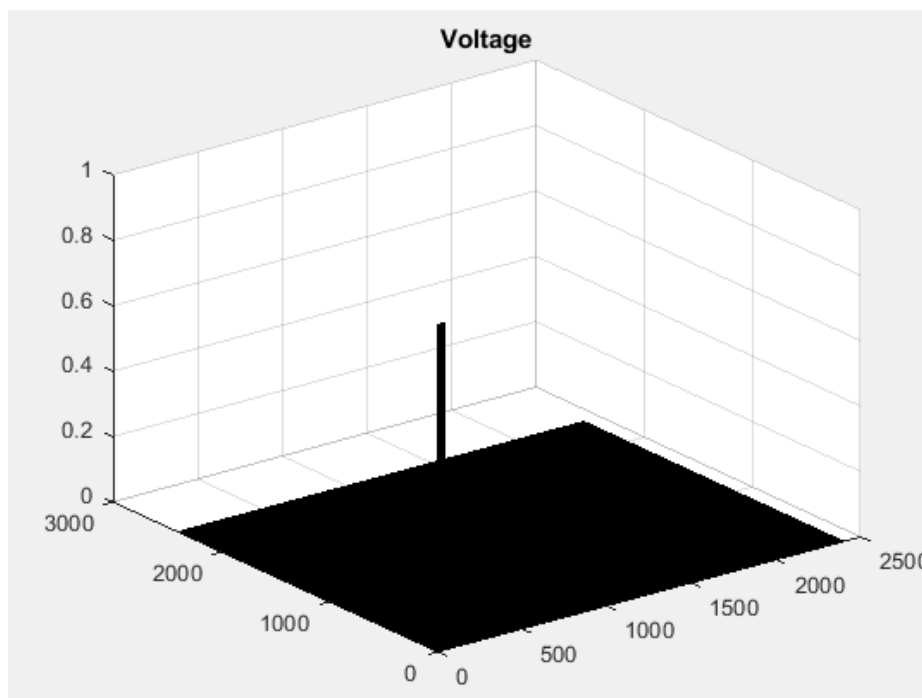
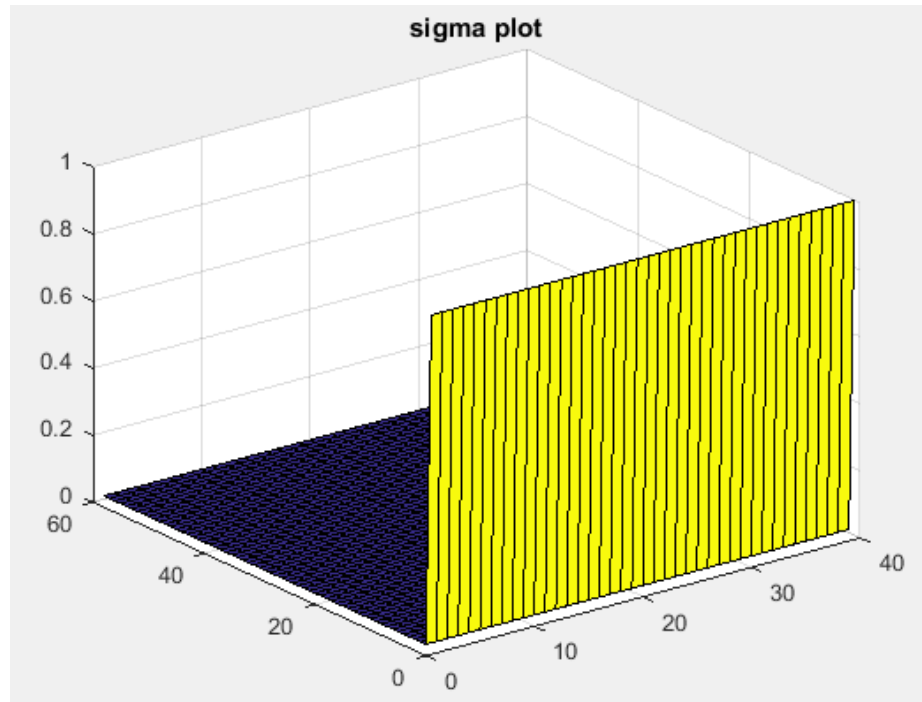
** Please see MATLAB code for my attempts as I did not finish the assignment. **

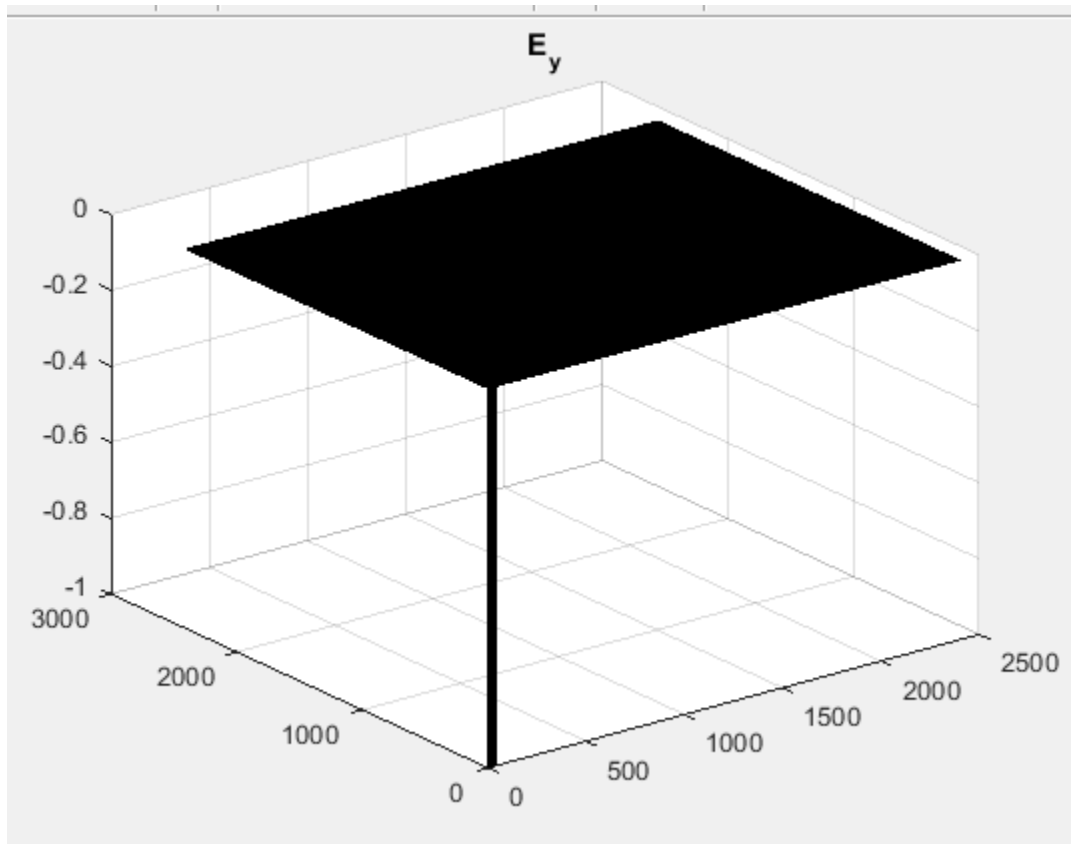
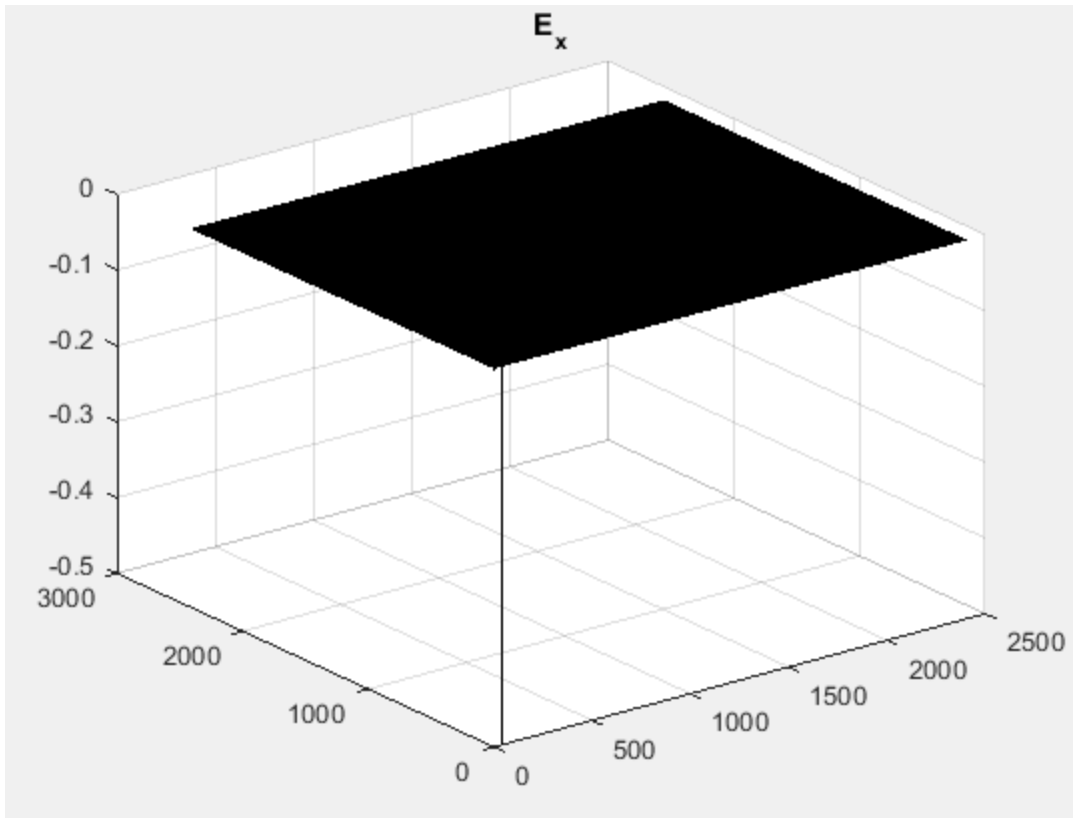
It is expected that the numerical solution would be more accurate than the analytical solution because it is a more detailed and powerful computation of the problem. It uses the power of repeated computing to numerically reach a solution instead of approximating the solution using the $V(x,y)$ equation described in the assignment manual.

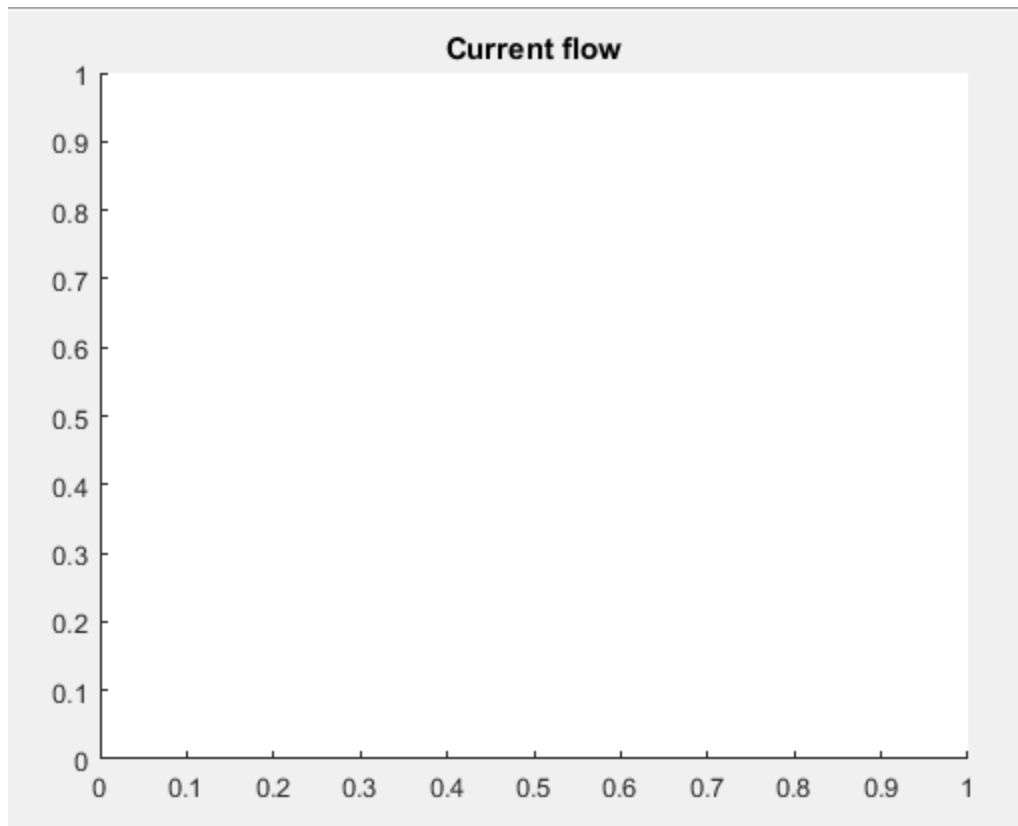


2. Current Flow

** Please see MATLAB code for my attempts as I did not finish the assignment. **







References

- [1] A. Branicki, "PART1.m," GH Repository.
<https://github.com/andrewbranicki/assignment2/blob/master/assignment2/part_1.m> 24-Feb-2019.
- [2] "Laplace's equation," *Wikipedia*. [Online]. Available:
https://en.wikipedia.org/wiki/Laplace's_equation. [Accessed: 23-Feb-2020].
- [3] A. Langevin, "voltagefeild.m," GH Repository.
<<https://github.com/AdamLangevin/Assignment2/blob/master/voltageFeild.m>> 26-Feb-2018.
- [4] B. Bogosel, "Finite Difference Method for 2D Laplace equation," *Beni Bogoşels blog*, 27-Oct-2014.
[Online]. Available: <https://mathproblems123.wordpress.com/2012/10/19/finite-difference-method-for-2d-laplace-equation/>. [Accessed: 23-Feb-2020].