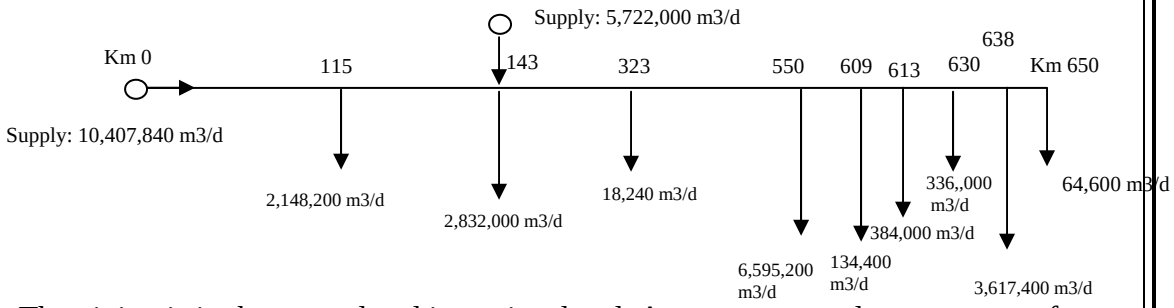
ASSIGNMENT 2 CHE 5480

DUE: February 10. Send through e-mail. Include the simulation file and a narrative explaining what was done and how.

#Problem 1 (Exercise 1-14 in notes)

Consider the shown in the following figure:



- The piping is in the ground and is not insulated. Assume a ground temperature of 25°C and a ground conductivity of 0.7 W/(m °C). The gas elevation profiles are provided in the following table:

Km	***Elevation (m)***
0	42
115	7
143	14.93
323	60
550	10
609	120
613	122
630	235
638	470
650	890

- The gas ((1.9% methane, 5% Ethane, 2% propane, 1% n-butane and 0.1% n-pentane) is supplied at the two points indicated in the diagram at 1,367 kPa and 35°C in the first station (Km 0), and 1520 kPa and 30°C in the second (Km 143).
- Determine using simulations a) Piping diameter, b) Compressors at the supply station, c) cooling required. Do not use a pressure above 5,600 Kpa. Use cost data provided in class notes.
- Will new compressors be needed/beneficial?

#Problem 2

Set up a GAMS model to solve the same problem using the model by Edgar, Himmelblau and Bickel. Compare results with the previous problem

#Problem 3: Sarah Scribner and Gregory Steelhammer: You are responsible for a report on pressure drop equations unifying report. Coordinate with me its format.