# Modeling

**1- Load libraries**

**2- Load logs used in last session**

**3- Clean and prepare dataframe for MSE calculations**

**4- Compute MSE**

**5- Plot drilling parameters**

**6- Determine if there is a relationship between the parameters**

**7- Code to show a perfect linear regression**

**8- Code showing a non-perfect linear regression**

**9- Show and evaluate a regression between RPM and ROP**

**10- Show and evaluate a regression between TORQUE and MSE**

**11- Define a function to evaluate regressions**

**12- Use the function to show the regression between torque and MSE**

**13- Use the function to show the regression between WOB y ROP**

**14- Code to evaluate multiple regressions models for ROP, select the best model (do not use the last 3000 lines)**

**15- Code to select the best model**

**16- Plot predicted ROP and the real ROP for the last 3000 data points**

**17- Apply smoothing to the curves**