#total\_fre = []

for (key\_1,values\_1), (key\_2,values\_2) in zip(lists\_slope.items(), lists\_intercept.items()):

a, b = values\_1

c, d = values\_2

test\_df['new\_threshold\_A'] = test\_df['B']\*a + c

test\_df['new\_threshold\_BCD'] = test\_df['B']\*b + d

new\_sch\_A1 = [] # List to store values for the new column

c\_s = 0

produced\_first\_one = False # Flag to track if the first 1 has been produced in the new column

for index, row in test\_df.iterrows():

if not produced\_first\_one:

if row['A1'] == 0:

c\_s += row['Fuel Flow']

if c\_s >= row['new\_threshold\_A']:

new\_sch\_A1.append(1)

produced\_first\_one = True

c\_s = 0 # Reset cumulative coal flow

else:

new\_sch\_A1.append(0)

else:

new\_sch\_A1.append(1)

produced\_first\_one = True

c\_s = 0

else:

c\_s += row['Fuel Flow']

if c\_s >= row['new\_threshold\_A']:

new\_sch\_A1.append(1)

c\_s = 0 # Reset cumulative coal flow

else:

new\_sch\_A1.append(0)

test\_df['new\_sch\_A1'] = new\_sch\_A1

cumulative\_sum = 0

for index, row in test\_df.iterrows():

if row['new\_sch\_A1'] ==0:

cumulative\_sum += row['Fuel Flow']

test\_df.at[index, 'CF\_A1'] = cumulative\_sum

else:

cumulative\_sum = 0

test\_df.at[index, 'CF\_A1'] = 0

## BCD

new\_sch\_B1 = [] # List to store values for the new column

c\_s = 0

produced\_first\_one = False # Flag to track if the first 1 has been produced in the new column

for index, row in test\_df.iterrows():

if not produced\_first\_one:

if row['B1'] == 0:

c\_s += row['Fuel Flow']

if c\_s >= row['new\_threshold\_BCD']:

new\_sch\_B1.append(1)

produced\_first\_one = True

c\_s = 0 # Reset cumulative coal flow

else:

new\_sch\_B1.append(0)

else:

new\_sch\_B1.append(1)

produced\_first\_one = True

c\_s = 0

else:

c\_s += row['Fuel Flow']

if c\_s >= row['new\_threshold\_BCD']:

new\_sch\_B1.append(1)

c\_s = 0 # Reset cumulative coal flow

else:

new\_sch\_B1.append(0)

test\_df['new\_sch\_B1'] = new\_sch\_B1

cumulative\_sum = 0

for index, row in test\_df.iterrows():

if row['new\_sch\_B1'] ==0:

cumulative\_sum += row['Fuel Flow']

test\_df.at[index, 'CF\_B1'] = cumulative\_sum

else:

cumulative\_sum = 0

test\_df.at[index, 'CF\_B1'] = 0

# total\_fre.append(test\_df['new\_sch\_B1'].sum())