Assignment 2

Duckworth Lewis Method

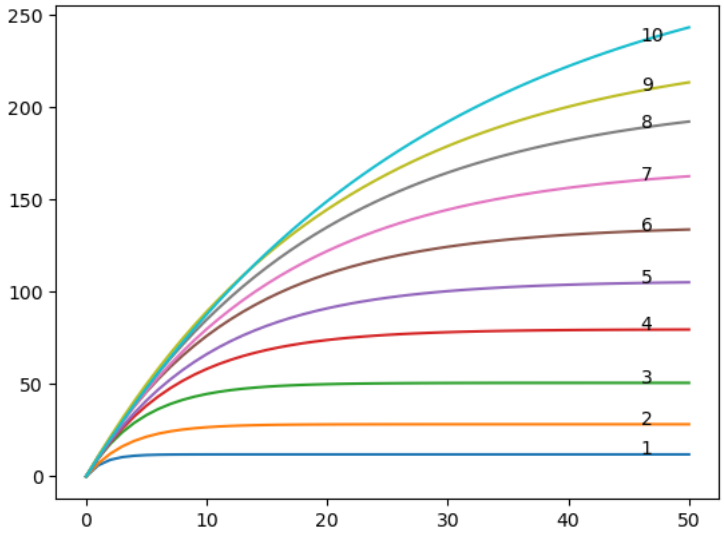
Name: Adarsh Shah, MTech (AI)
SR no: 04-03-06-10-51-21-1-19473

The data required is the wickets remaining, overs remaining and the runs that can be scored with the remaining resources. These are obtained by preprocessing the provided dataset. The new data 'Runs Remaining' for each over is obtained by subtracting runs scored till that over from total runs scored by the team in an inning.

1. DuckworthLewis20Params( )

The objective error function 'obj1' calculates the mean squared error for given Z0(w) and b(w). The SciPy's 'fmin' method is used to optimize the obj1 using gradient descent and generates the parameters as follows:

Wickets	Z0	b	error
1	11.96	0.69934	0.29
2	28.29	0.28592	0.35
3	50.70	0.21305	0.37
4	79.70	0.13111	0.37
5	105.94	0.09814	0.35
6	136.02	0.08200	0.35
7	169.65	0.06359	0.36
8	206.92	0.05287	0.41
9	235.01	0.04777	0.47
10	292.26	0.03570	0.55



2. DuckworthLewis11Params( )

The objective error function 'obj2' calculates the mean squared error for given Z0(w) and L. The SciPy's 'fmin' method is used to optimize the obj2 using gradient descent and generates the parameters as follows:

Wickets	Z0	L	error
1	11.65	10.81385	0.01
2	26.82	10.81385	0.01
3	50.71	10.81385	0.02
4	78.79	10.81385	0.03
5	104.17	10.81385	0.04
6	138.14	10.81385	0.05
7	169.52	10.81385	0.05
8	207.97	10.81385	0.07
9	241.00	10.81385	0.07
10	284.79	10.81385	0.07