In this model, our target is simulating a dynamic process so as to predict the elevation level in 2025, 2030 and 2050.

From Sep to Dec of 2021, because of human intervention, the data does not follow the rule. We will not study it. According to historical elevation level data of Lake Mead, except the data from Sep to Dec of 2021, a periodic function can be got.

First 3 month increase with slope of and constant is . The function is

After that, there is continuous 60 month decrease with slope of and constant is . The function is

The overall cycle is 63 months, and the function is:

The overall cycle function is as following,

The results for 2025, 2030, 2050 would be

|  |  |
| --- | --- |
| Year | Elevation Level(ft) |
| 2025 | 1037.35577 |
| 2030 | 984.49551 |
| 2050 | 768.30195 |