|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | humidity and  temperature | **centroid** | **lom** (max of maximum) | **mom** (mean of maximum) | **som** (min of maximum) |
| Ex #1 | humidity = 1  temperature = 1 | 30 | 30 | 30 | 30 |
| Ex #2 | humidity = 1  temperature = 45 | 57.35 | 70 | 60 | 50 |
| Ex #3 | humidity = 10  temperature = 35 | 39.68 | 40 | 30 | 20 |
| Ex #4 | humidity = 25  temperature = 10 | 8.44 | 13.33 | 6.69 | 0 |
| Ex #5 | humidity = 30  temperature = 1 | 7.77 | 10 | 5 | 0 |
| Ex #6 | humidity = 30  temperature = 45 | 30 | 30 | 30 | 30 |

If we look at the table, we see that values are always **som** <= **mom** <= **lom** which is logical since **som** takes the minimum of maximum, **mom** the mean od maximum so it’s in the center, and **lom** takes the max of maximum so it has the highest values.

For **humidity** =1 and **temperature** = 45 (Ex #2), the **temperature** is the highest and the **humidity** is the lowest so we expect to see the maximum value 70 but that is only the case for **lom**, the others have smaller values (57.35, 60, 50).

As for Ex #1 and Ex #6, all the methods gave the same value 30min. Thus, different inputs might have the same output.

There isn’t a best defuzzification method, each method can be the best for a specific case. So, for example, if I want to limit my water consumption to the maximum, I would use the **som** method.

Overall, we can say that our answers are very logical. If we look at some examples where we fix the **humidity,** but we change the **temperature** (Ex#1 and Ex#2) and (Ex#5 and Ex#6), we find that the irrigation duration goes up as the **temperature** goes up which is very logical. The same thing for when we fix the **temperature** (Ex#2 and Ex#6), if the humidity goes up, the irrigation duration goes down.