

# Unwrap $\theta_2$

```

M_unwrap :=
  j_L ← 2
  k ← 0
  M_unwrap_{j_L-1} ← k · 2 π
  while j_L ≤ n
    check ← θ_{2_{j_L}} - θ_{2_{j_L-1}}
    if check < -π
      k ← k + 1
      M_unwrap_{j_L} ← k · 2 π
      j_L ← j_L + 1
  M_unwrap
  
```

$j := 1 .. n =$   
 $n = 542$

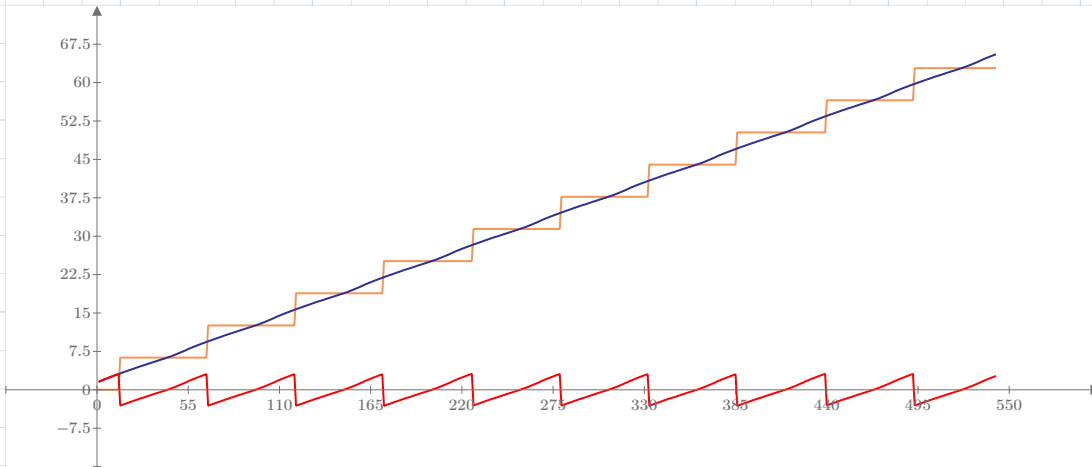
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- ⋮

Note: If  $\theta_2$  initial point was negative then would need to add another condition to check this in the "while" loop

Add the "steps" to  $\theta_2$

$$\theta_{2\_UW} := M_{unwrap} + \theta_2$$

Note: "j" is the timestep (1/30 sec)



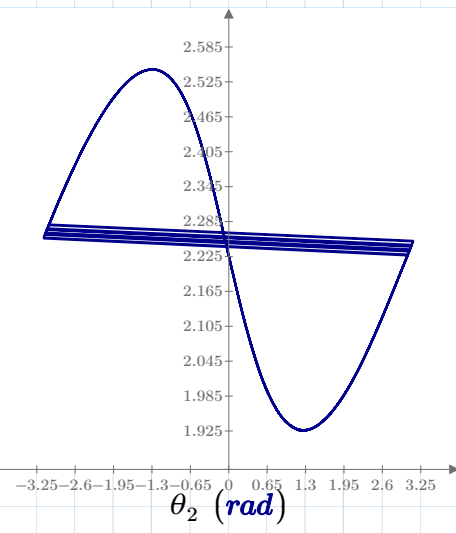
$M_{unwrap} \text{ (rad)}$

$\theta_{2\_UW} \text{ (rad)}$

$\theta_2 \text{ (rad)}$

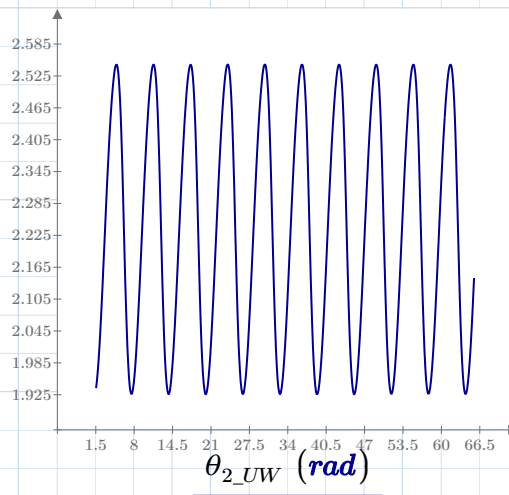
$j$

Graph before "unwrapping"  $\theta_2$



$\theta_4 \text{ (rad)}$

Graph after "unwrapping"  $\theta_2$



$\theta_4 \text{ (rad)}$