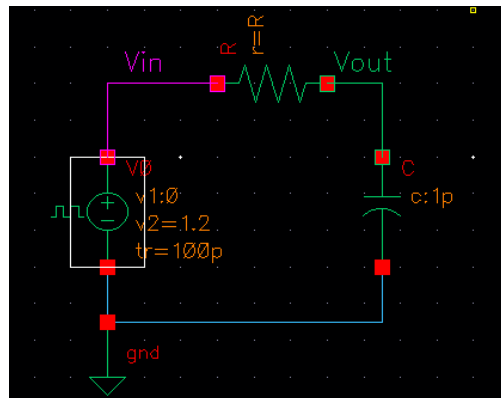


# Low Pass Filter Simulation

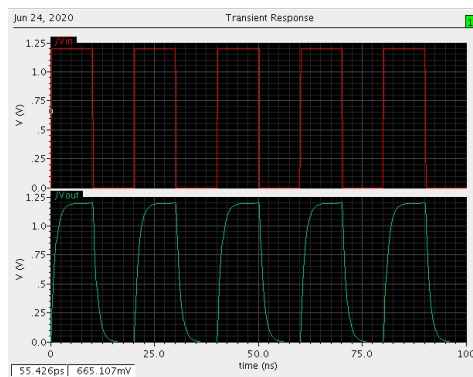
SOFTWARE TOOL: CADENCE VIRTUOSO

Omama Elrefaei | 24 Jun 2020

# Low Pass Filter



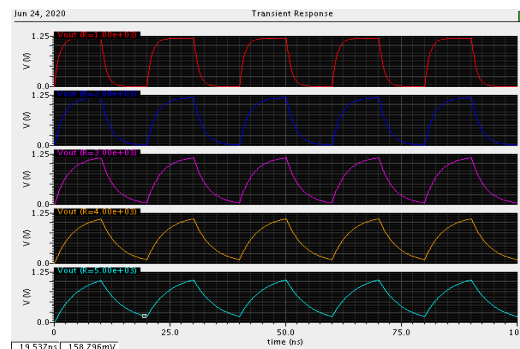
## Transient Analysis:



- $R = 1k\Omega$  and  $1ns$  time constant. 2
- $V_{in}$ : square wave
- $Thigh = Pulse\ Width = 10ns, Tclk = Period = 20ns$
- $Trise = Tfall = 100ps$ .

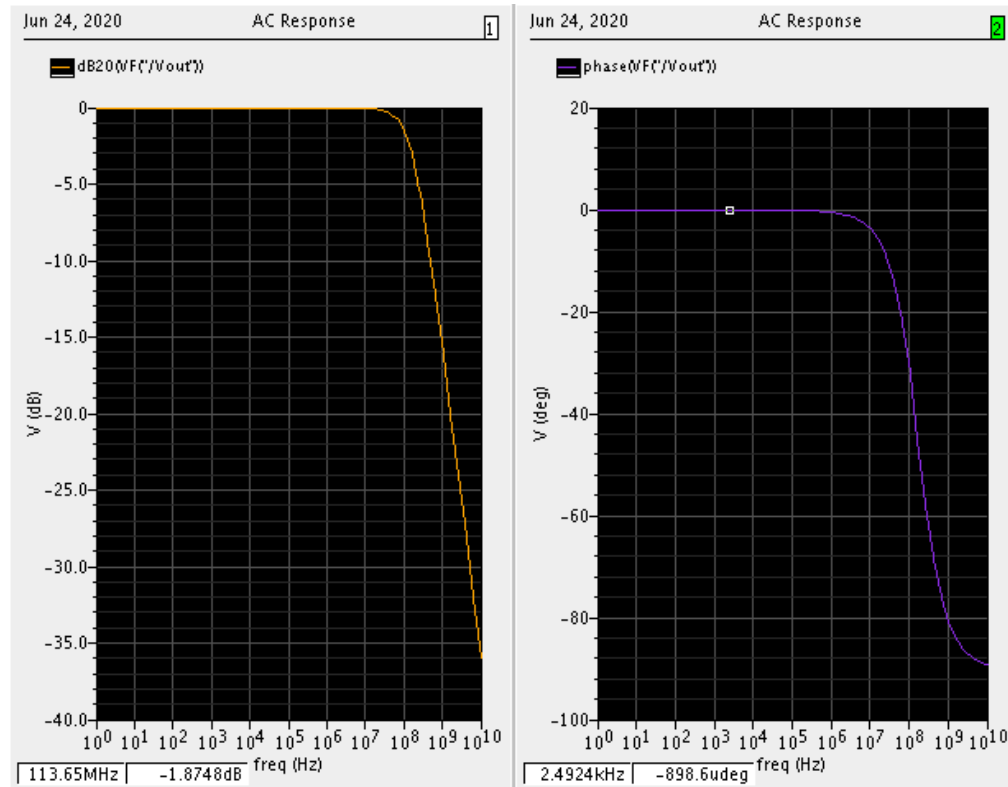
```
riseTime(VT("/Vout") 0 nil 100p nil 10 90 nil "time" )
2.453E-18
```

- Parametric sweep for  $R = 1: 5k\Omega$ :

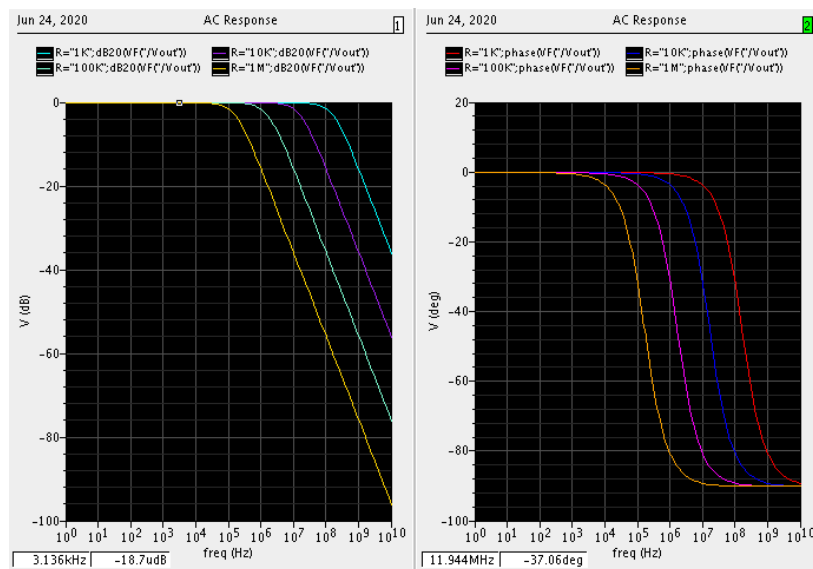


## AC Analysis:

- Bode Plot:



- parametric sweep for = 1,10,100,1000k $\Omega$ :



## Pole Zero Analysis:

```
*****  
PZ Analysis `pz`  
*****
```

	Poles (Hz)		
	Real	Imaginary	Qfactor
1	-1.59155e+08	0.00000e+00	5.00000e-01
No zero is found			