

# pyCircAdapt Cheat Sheet

VanOsta2023

## Initialize the model

```
>>> import circadapt
>>> import circadapt.model
>>> model = circadapt.model.VanOsta2023()
```

### General

Unit
t_cycle - 0.85

### PressureFlowControl Timings

Unit	PFC	Unit	Timings
p0 -	1.22e+04	timefac -	1.00e+00
q0 -	8.50e-05	tauAv -	1.85e-01
stable_threshold -	1.00e-03	dTauAv -	0.00e+00
is_active -	True	law_tauAv -	2
		law_Ra2La -	1
		law_ta -	1
		law_tv -	1
		c_tauAv0 -	2.20e-01
		c_tauAv1 -	-3.00e-02

### Bag

Unit	Peri
k -	10.0
p_ref -	100.0
V_ref -	5.79e-04

### Chamber

Unit	La	Ra
buckling -	False	False

## Patch2022

	Unit	pLa0	pRa0	pLv0	pSv0	pRv0
Am_ref -		4.01e-03	3.11e-03	9.18e-03	5.19e-03	1.32e-02
V_wall -		1.60e-05	7.72e-06	1.16e-04	4.51e-05	6.88e-05
v_max -		14	14	7	7	7
l_se0 -		0.04	0.04	0.04	0.04	0.04
l_s0 -		2	2	2	2	2
l_s_ref -		2	2	2	2	2
dl_s_pas -		1	1	1	1	1
Sf_pas Pa		9.5	10.4	424.4	417.7	439.2
tr -		0.40	0.40	0.21	0.21	0.21
td -		0.40	0.40	0.24	0.24	0.24
time_act -		0.15	0.15	0.43	0.43	0.43
Sf_act Pa		100000	100000	120000	120000	120000
k1 -		10	10	10	10	10
dt -		0.0	0.0	0.0	0.0	0.0
C_rest -		0	0	0	0	0
l_si0 -		1.51	1.51	1.51	1.51	1.51
LDAD -		1.06	1.06	0.74	0.74	0.74
ADO -		0.08	0.08	0.75	0.75	0.75
LDCC -		4.00	4.00	3.00	3.00	3.00
SfPasMaxT Pa		3.60e+03	3.60e+03	4.20e+03	4.20e+03	4.20e+03
SfPasActT Pa		2.80e+03	2.80e+03	6.60e+03	6.60e+03	6.60e+03
FacSfActT -		2.80e-01	2.80e-01	6.90e-01	6.90e-01	6.90e-01
LsPasActT -		3.00e+00	3.00e+00	2.31e+00	2.31e+00	2.31e+00
adapt_gamma -		5.00e-01	5.00e-01	5.00e-01	5.00e-01	5.00e-01

## Valve2022

	Unit	SyVenRa	RaRv	RvPuArt	PuVenLa	LaLv	LvSyArt
adaptation_A_open_fac -		1.00e+00	1.12e+00	1.00e+00	1.00e+00	1.12e+00	1.00e+00
A_open -		5.00e-04	5.26e-04	4.70e-04	5.07e-04	5.58e-04	4.98e-04
A_leak -		2.65e-04	2.65e-10	2.65e-10	2.65e-04	2.65e-10	2.65e-10
l -		1.63e-02	1.63e-02	1.63e-02	1.63e-02	1.63e-02	1.63e-02
papillary_muscles -		0.00e+00	1.00e+00	0.00e+00	0.00e+00	1.00e+00	0.00e+00
*.slope -		1.00e+02	1.00e+02	1.00e+02	1.00e+02	1.00e+02	1.00e+02
*.min -		1.00e-01	1.00e-01	1.00e-01	1.00e-01	1.00e-01	1.00e-01
*A_open_fac -		1.00e-01	1.00e-01	1.00e-01	1.00e-01	1.00e-01	1.00e-01
soft_closure -		True	True	True	True	True	True
fraction_A_open_Aext -		9.00e-01	9.00e-01	9.00e-01	9.00e-01	9.00e-01	9.00e-01

## Tube0D

	Unit	SyArt	SyVen	PuArt	PuVen
l -		4.00e-01	4.00e-01	1.90e-01	1.90e-01
A_wall -		1.13e-04	3.72e-05	7.27e-05	4.32e-05
k -		1.7	2.3	1.7	2.3
p0 -		1.22e+04	2.97e+02	1.91e+03	5.81e+02
A0 -		4.98e-04	4.99e-04	4.69e-04	5.06e-04

## ArtVen

	Unit	CiSy	CiPu
p0 -		6.30e+03	1.00e+03
q0 -		4.50e-05	4.50e-05
k -		1.0	1.9

## Standard plot

```
>>> model = circadapt.model.VanOsta2023()
```

