# Content

[Content 0](#_Toc55193411)

[Axis 0](#_Toc55193412)

[Semicircular track 0](#_Toc55193413)

[Cell membership to a grid 1](#_Toc55193414)

[Causal loop pop-growth 1](#_Toc55193415)

[PSA discussion 1](#_Toc55193416)

[Root finding line+circle 2](#_Toc55193417)

[Green port causal loop 2](#_Toc55193418)

[Mechanical potential energy 3](#_Toc55193419)

[Min-med-max flowchart 4](#_Toc55193420)

[Moment of inertia 4](#_Toc55193421)

[Notes 5](#_Toc55193422)

[Version 5](#_Toc55193423)

# Axis

*x*

*y*

*z*

*x*

*z*

*y*

*x*

*y*

*z*

*x*

*z*

*y*

*g*





# Semicircular track

*A*

*B*

*C*

*F*

*O*

*D*

*E*

*vA*

*vB*

*μk* = 0

*μk* = 0

*vF*

*vD*

*2R*

*vE*

*vC*



*x*

*y*

*z*

# Cell membership to a grid

white: mature, red: new

# Causal loop pop-growth

*P*

*B*

*D*

+

+

–

+

*R*

*B*

# PSA discussion

*θ*

*θ*

# Root finding line+circle

*C*

*A*

*B*

*O*

*t*

*t* + 2Δ*t*

*t* + Δ*t*

*t* – Δ*t*

*v*Δ*t*



, , , ,  
, , ,  
, , , or the right side

# Green port causal loop

Port-driven GDP

Energy Occupation

Water Occupation

Waste Discharge

Urban GDP

+

Environmental Quality

Resources Loss

Health Risk

+

+

–

+

+

–

–

–

Green Technology

–

–

–

+

Trade

+

Port Demand

Port Pressure

+

+

+

Port Cargo Troughput

+

Port Investment

Shoreline Occupation

+

–

+

Port Cargo Troughput Capacity

+

+

–

Port Revenue

Port Profit

+

+

+

+

Population

Death

Birth

–

+

In-Migration

+

+

+

–

Life Quality

–

–

Intrastate Industry

Interstate Industry

Interstate Infrastructure

+

+

Intrastate Infrastructure

+

+

–

–

Investment

+

+

+

+

Carrying Capacity

+

# Mechanical potential energy



*y*

*m*

*m*1

*m*2

*l*

*l*

*l*



*y* + *y*0

–*y* + *y*0

*x*

*y*

*z*

*x*

*y*

*z*



*θ*

*y*

*x*

*y*

*z*

*s*



*x*

*y*

*z*

*m*1

*m*2

*l*1

*l*2

*l*1

*l*2

*θ*

*y*0 + *l*1 sin *θ*

*y*0 – *l*2 sin *θ*

*x*

*y*

*z*



*y*0 + *y*

*y*0 – *y*

*k*

*x*

*y*

*z*



Δ*h*

Δ*V*

# Min-med-max flowchart

1

Start

*x­i*,   
*i* = 1 .. *N*

*i* = 1

*j* = *i* + 1

*xi* > *xj*

*xi* ⇄ *xj*

1

*j* ≤ *N*

*j* = *j* + 1

2

2

3

3

*i* = *i* + 1

*i* < *N*

*x*min = *x*1

*x*max= *xN*

4

4



*x*med = *xm*

Start

*x*min, *x*max, *x*med

Y

N

N

Y

Y

N

..

# Moment of inertia

*m*1

*m*2

*m*3

*m*4

*r*⊥,4 = 0

*r*⊥,3

*r*⊥,2

*r*⊥,1

*dm*

*r*⊥

*M* = ∫ *dm*





# Common moments of inertia



*R* >> *L*

*L* >> *R*

*L* >> *H*

*W* >> *H*



*L*

*W*

*H*

*L*

*L*

*L*



# Notes

* 130% as for jekyll blog with MathJax

# Version

20201031.0