



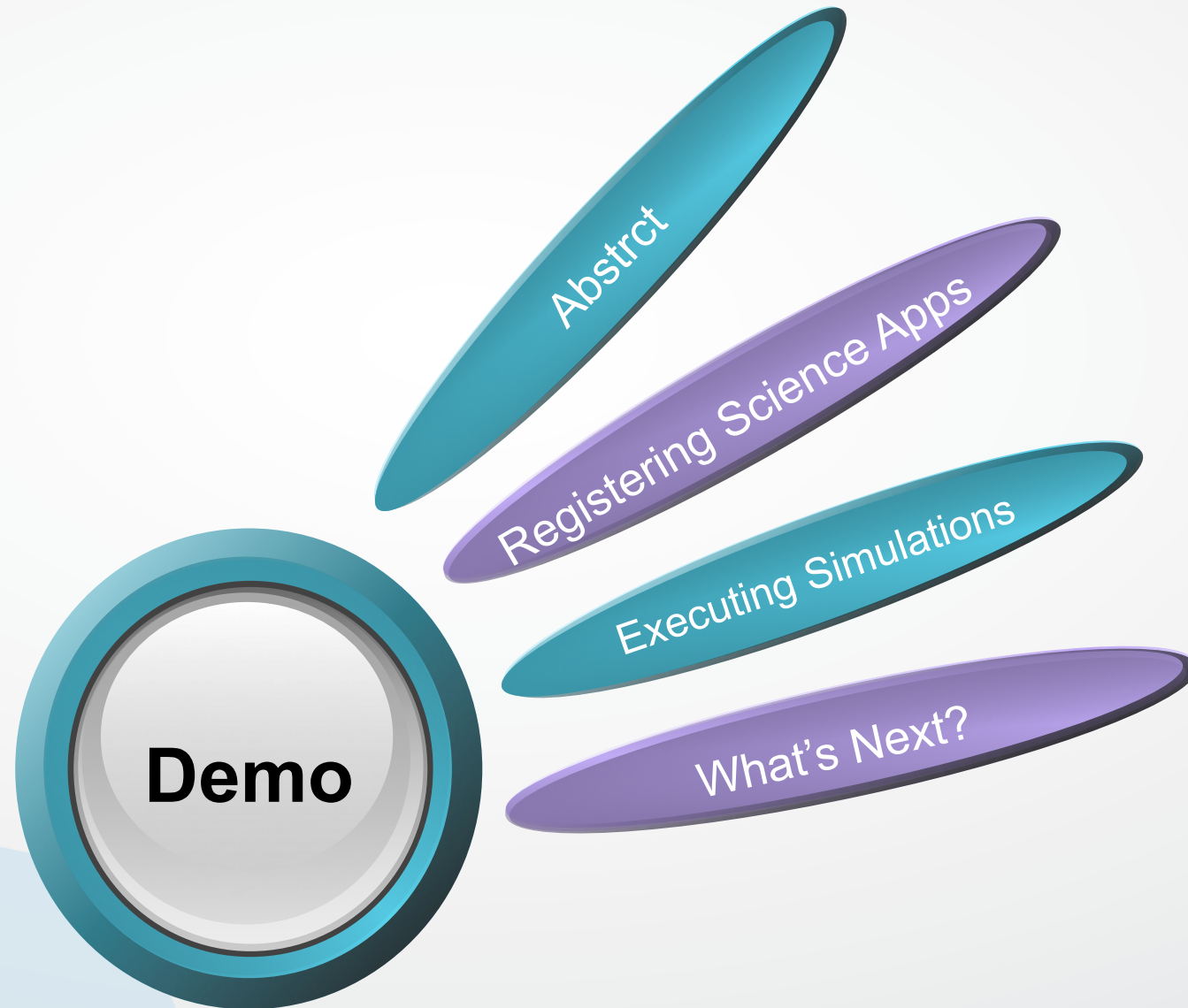
EDISON

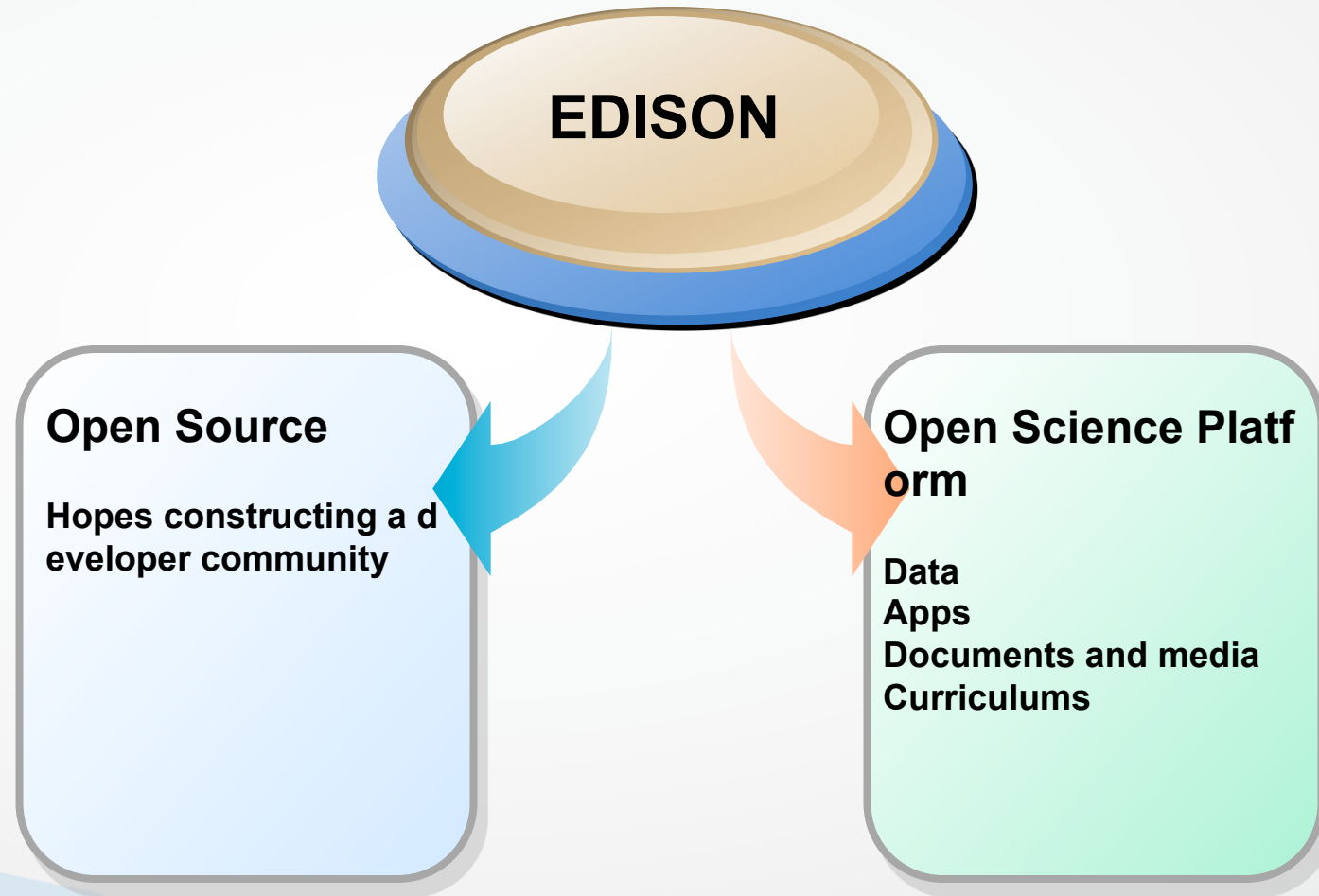
EDISON

Looking for The Open Science Platform

KISTI





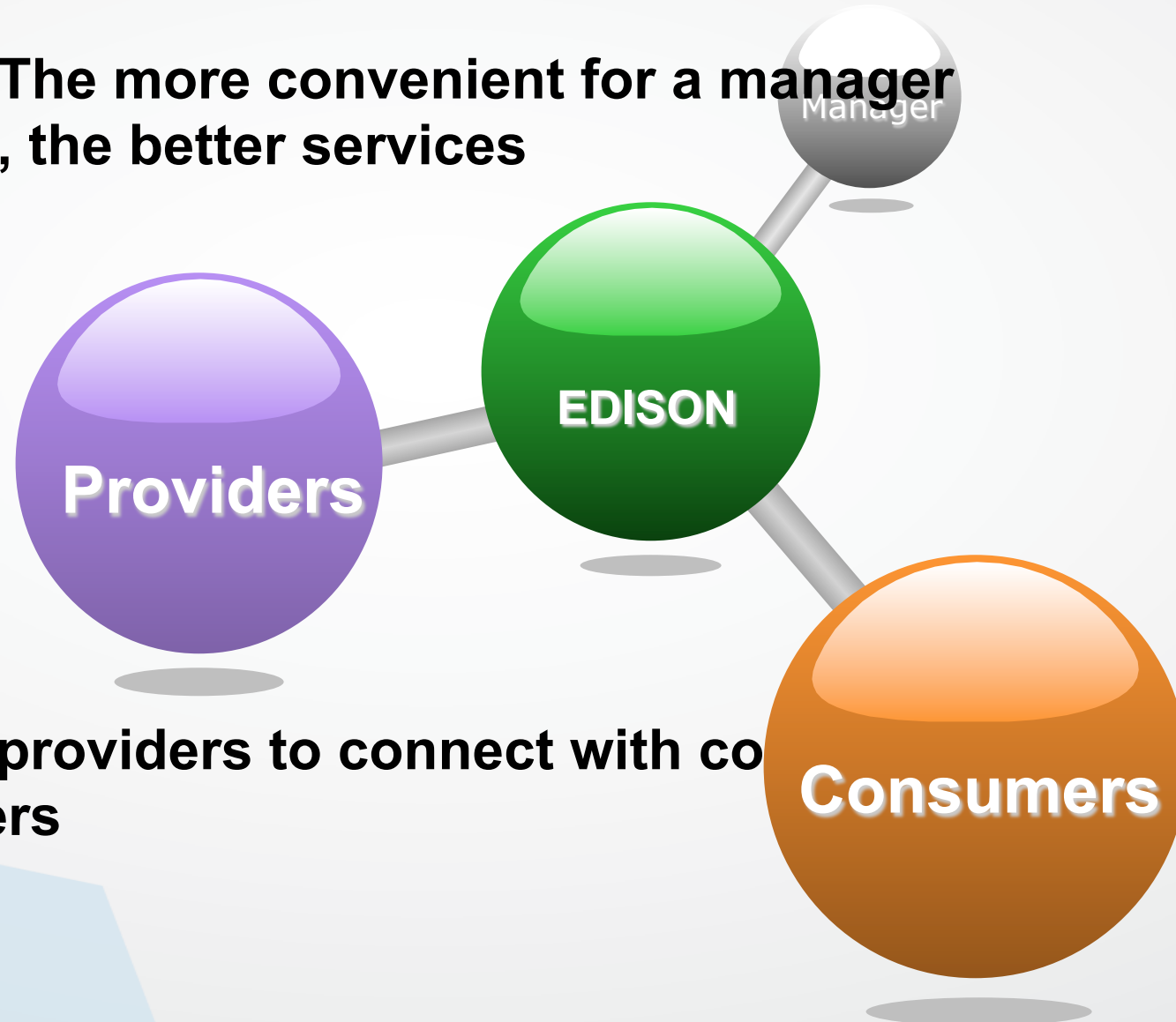




EDISON, A Web-based Open Science Platform



**The more convenient for a manager
, the better services**



Helps providers to connect with consumers

For
Managers

Base on a leading open source web portal platform, Liferay
Can be managed by a person who has no programming experiences

For
Providers

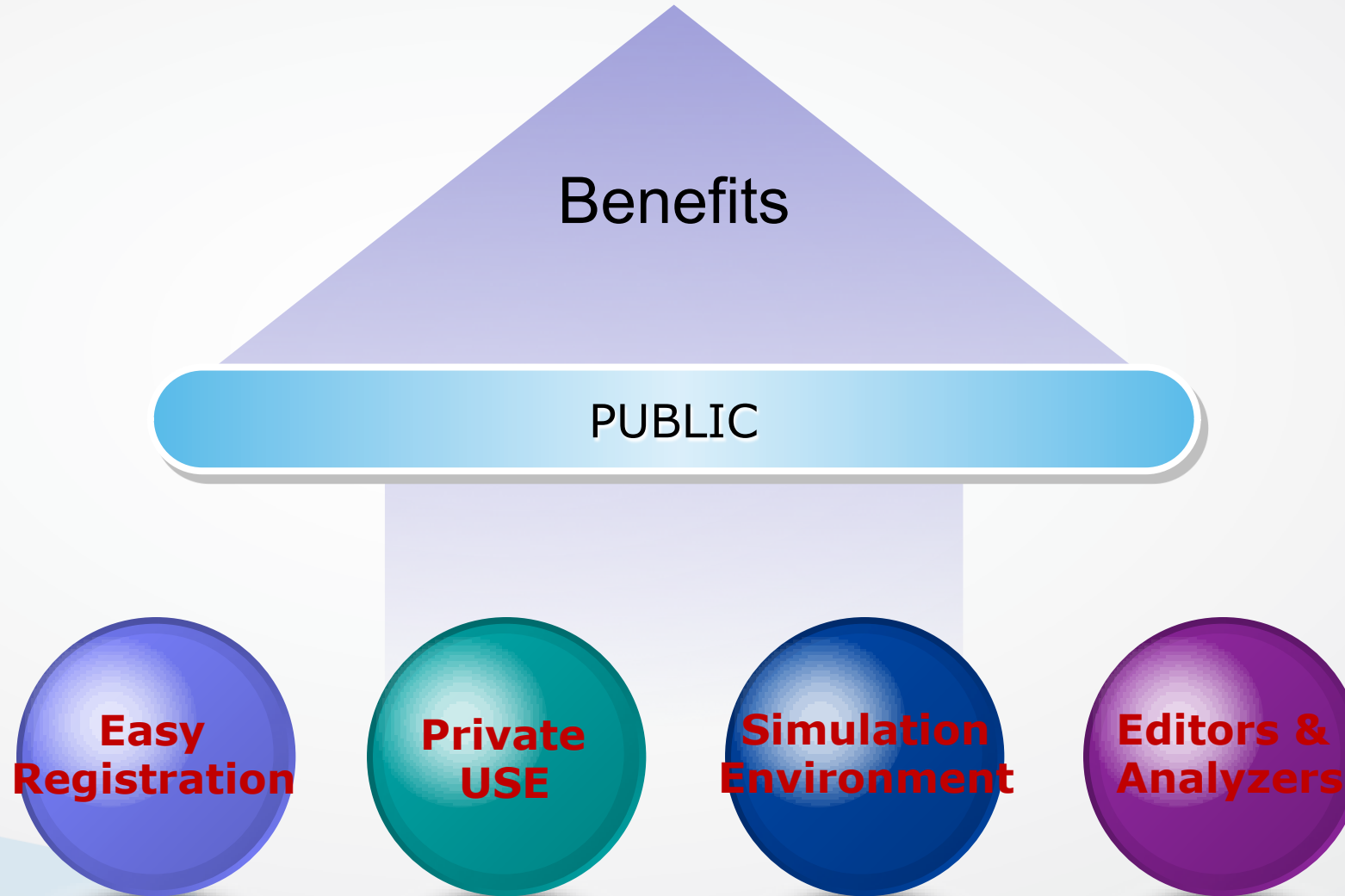
Bring in-house codes to the public
Deploy major open sources
Induce commercial vendors

For
Consumers

Develop user friendly UI
Figure services out to meet user needs



Open In-house Codes to The Public





Registration – General Information



<div>App Info</div> <div>Execute Info</div> <div>Port Info</div> <div>Layout</div> <div>Public Data</div>	Default Info		List	Upgrade	Private	Save	Delete
	App Name *	BerryCurvatureCalculator		Version*	1.0.1		
	Service Language *	Korean (South Korea)					
	App Title *	밴드위상 계산 코드					
	Category *	Gas Turbine Blade(OPEN)					
Computational Chemistry(OPEN)							
Computational Structural Dynamics(OPEN)							
<div><input type="checkbox"/> Classical Semiconductive Device</div> <div><input type="checkbox"/> classical Physics</div> <div><input type="checkbox"/> Etc</div> <div><input type="checkbox"/> Molecular Level</div> <div><input type="checkbox"/> Advanced Nano-Device</div> <div><input checked="" type="checkbox"/> Quantum Physics</div> <div><input type="checkbox"/> Atom Level</div> <div><input type="checkbox"/> Virtual Test in General Physics</div>							
Nano Physics(CLOSE)							
Urban environment(OPEN)							
KFLOW(OPEN)							
SNUFOAM(OPEN)							
Computer Aided Optimal Design(OPEN)							
Computational Fluid Dynamics(OPEN)							
Computational Materials(OPEN)							



Registration – Information for Execution



App Info

Execute Info

Port Info

Layout

Public Data

Execute Information

ListUpgradePrivateSaveDelete

File Name *

main.py

Open Level

OPEN_RUN_ONLY

Source File

파일 선택

선택된 파일 없음

App Type

Solver

Run Type

Sequential

PARALLEL_Module

Nobody

Max CPU

0

Default CPU

0

Compile

main.py
reader.py
readinput.py

Upload Option ?

Upload

Upload Case ?

Update

Execute File

파일 선택

선택된 파일 없음

file save

complete

Request Library

ViewsRequest

No.	File Name	Version	Date	Status
No Data				



Registration – Defining Input and Output Ports



App Info

Execute Info

Port Info

Layout

Public Data

Command Line

List

Upgrade

Private

Save

Delete

main.py -h berry_hr -i berry_input3

Input Port

Input Port Add

No.	Port Name	Data Type Name	Sample File	Required	Default	Delete
1	-h	berry_hr		<div>Y</div>		<div>Delete</div>
2	-i	berry_input3		<div>Y</div>		<div>Delete</div>

Log Port

Log Port Add

No.	Port Name	Data Type Name	edison-table-list-header-port-type	File Path	Default	Delete
No Data						

Output Port

Output Port Add

No.	Port Name	Data Type Name	edison-table-list-header-port-type	File Path	Required	Default	Delete
1	-m	ImageViewer	<div>file</div>	result/Bar	<div>Y</div>		<div>Delete</div>
2	-m2	ImageViewer	<div>file</div>	result/Ber	<div>Y</div>		<div>Delete</div>



App Info

Execute Info

Port Info

Layout

Public Data

Disabled
Flow WorkBench ?

List

Upgrade

Private

Save

Delete

Run

-i Input Port

-h_DEFAULT ? Input Port

-i_DEFAULT ? Input Port

-m_DEFAULT ? Output Port

-m2_DEFAULT ? Output Port

Simulation under Layout(1)

BerryCurvatu...

1.0.1

New Simulation

BerryCurvatureCalcul...

- #0008
- #0007
- #0006
- #0005
- #0004
- copy #0005
- #0006
- #0005

BerryCurvatureCalcul...

BerryCurvatureCalcul...

MY EDISON BerryCurvatureCalculator BerryCurvatureCalculator-1.0.1 #0008 Layout

/2018-05-09-06-56-09.793/Fe_hr.dat

2018-05-09-06-56-09.793

- Fe_hr.dat [9.2 MB]
- i [715 B]

Port Selector

Input Port 2

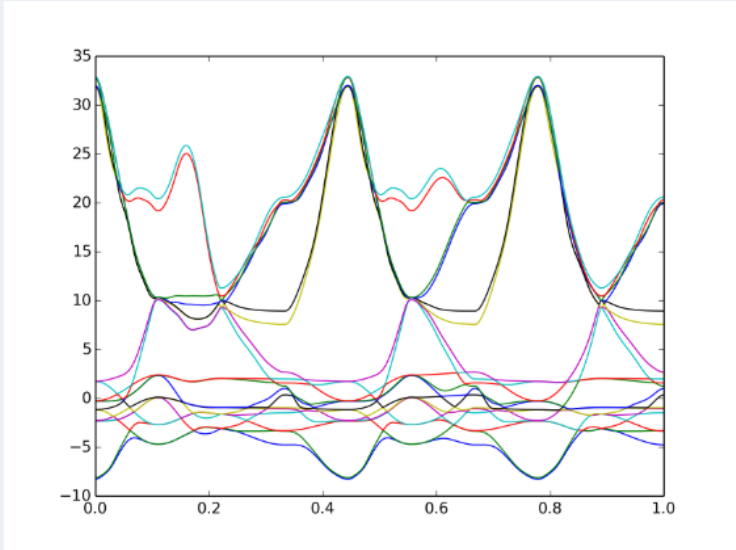
-h

-i

Output Port 2

Re-Run

/Band Structure.png



+ - 1:1 33%

Simulation under Layout(2)

BerryCurvatu...

1.0.1

New Simulation

BerryCurvatureCalcul...

#0008

#0007

#0006

#0005

#0004

copy #0005

#0006

#0005

BerryCurvatureCalcul...

BerryCurvatureCalcul...

MY EDISON

BerryCurvatureCalculator

BerryCurvatureCalculator-1.0.1

#0008

Layout

i

Menu

[Common]

fermlevel = 12.6442

[Berry.Kplane]

origin = 0.0 0.0 0.0

k1 = 0.5 -0.5 -0.

k2 = 0.5 0.5 0.5

k1step = 23

k2step = 23

[Calc]

bulkband = true

berycurvature = true

[Atoms.UnitVectors]

a1 = 2.71175 2.71175 2.71175

a2 = -2.71175 2.71175 2.71175

a3 = -2.71175 -2.71175 2.71175

[Bulk.Bandkpath]

50 0.0000 0.0000 0.0000 0.500 -0.5000 -0.5000 G H

50 0.500 -0.5000 -0.5000 0.7500 0.2500 -0.2500 H P

50 0.7500 0.2500 -0.2500 0.5000 0.0000 -0.5000 P N

50 0.5000 0.0000 -0.5000 0.0000 0.0000 0.000 N G

50 0.0000 0.0000 0.000 0.5 0.5 0.5 G H

50 0.5 0.5 0.5 0.5 0.0 0.0 H N

50 0.5 0.0 0.0 0.0 0.0 0.0 N G

50 0.0 0.0 0.0 0.75 0.25 -0.25 G P

50 0.75 0.25 -0.25 0.5 0.0 0.0 P N

Port Selector

Input Port

2

Output Port

2

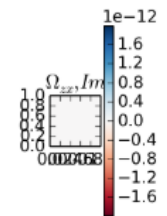
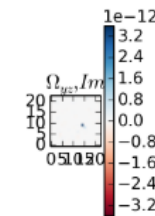
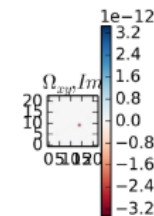
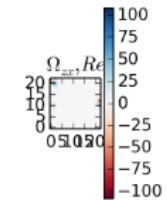
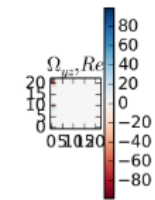
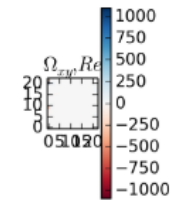
-m

-m2

Re-Run

/Berrycurvature.png

Menu





Simulation after Changing Layout



BerryCurvatu...
1.0.1

New Simulation

BerryCurvatureCalcul... ▾

#0008

#0007

#0006

#0005

#0004

copy #0005

#0006

#0005

BerryCurvatureCalcul... <

BerryCurvatureCalcul... <

MY EDISON

BerryCurvatureCalculator

BerryCurvatureCalculator-1.0.1

#0008

Layout

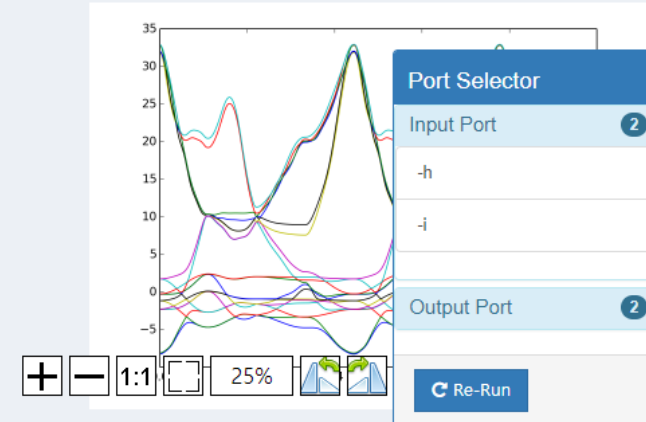
/2018-05-09-06-56-09.793/Fe_hr.dat

Menu ▾

2018-05-09-06-56-09.793
Fe_hr.dat [9.2 MB]
i [715 B]

/Band Structure.png

Menu ▾



i

Menu ▾

/Berrycurvature.png

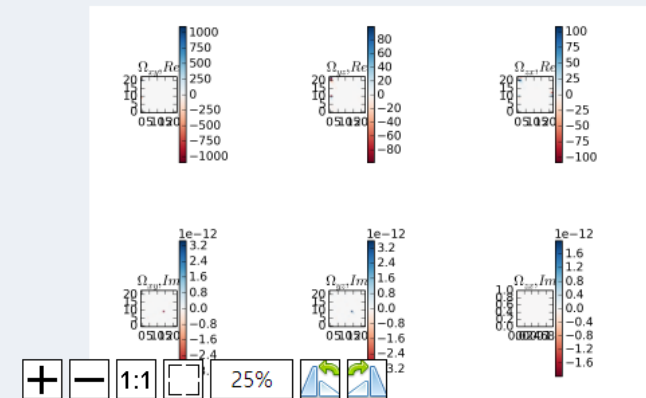
Menu ▾

[Common]
fermilevel = 12.6442

[Berry Kplane]
origin = 0.0 0.0 0.0
k1 = 0.5 -0.5 -0.
k2 = 0.5 0.5 0.5
k1step = 23
k2step = 23

[Calc]
bulkband = true
berrycurvature = true

[Atoms.UnitVectors]
a1 = 2.71175 2.71175 2.71175
a2 = -2.71175 2.71175 2.71175
a3 = -2.71175 -2.71175 2.71175





Simulation under Step-by-step(input)



BerryCurvatu...

1.0.1

New Simulation

BerryCurvatureCalcul... ▾

● #0008

● #0007

● #0006

● #0005

● #0004

● copy #0005

● #0006

● #0005

BerryCurvatureCalcul... <

BerryCurvatureCalcul... <

MY EDISON

BerryCurvatureCalculator

BerryCurvatureCalculator-1.0.1

#0008

input

analysis

i

Menu ▾

[Common]
fermlevel = 12.6442

[Berry.Kplane]
origin = 0.0 0.0 0.0
k1 = 0.5 -0.5 -0.
k2 = 0.5 0.5 0.5
k1step = 23
k2step = 23

[Calc]
bulkband = true
berrycurvature = true

[Atoms.UnitVectors]
a1 = 2.71175 2.71175 2.71175
a2 = -2.71175 2.71175 2.71175
a3 = -2.71175 -2.71175 2.71175

[Bulk.Bandkpath]
50 0.0000 0.0000 0.0000 0.500 -0.5000 -0.5000 G H
50 0.500 -0.5000 -0.5000 0.7500 0.2500 -0.2500 H P
50 0.7500 0.2500 -0.2500 0.5000 0.0000 -0.5000 P N
50 0.5000 0.0000 -0.5000 0.0000 0.0000 0.000 N G
50 0.0000 0.0000 0.000 0.5 0.5 0.5 G H
50 0.5 0.5 0.5 0.5 0.0 0.0 H N
50 0.5 0.0 0.0 0.0 0.0 0.0 N G
50 0.0 0.0 0.0 0.75 0.25 -0.25 G P
50 0.75 0.25 -0.25 0.5 0.0 0.0 P N

Port Selector

Input Port

2

-h

-i

Output Port

2

Re-Run



Simulation under Step-by-step(analyzing)



BerryCurvatu...

1.0.1

New Simulation

BerryCurvatureCalcul... ▾



● #0008



● #0007



● #0006



● #0005



● #0004



● copy #0005



● #0006



● #0005



BerryCurvatureCalcul... <

BerryCurvatureCalcul... <

MY EDISON

BerryCurvatureCalculator

BerryCurvatureCalculator-1.0.1

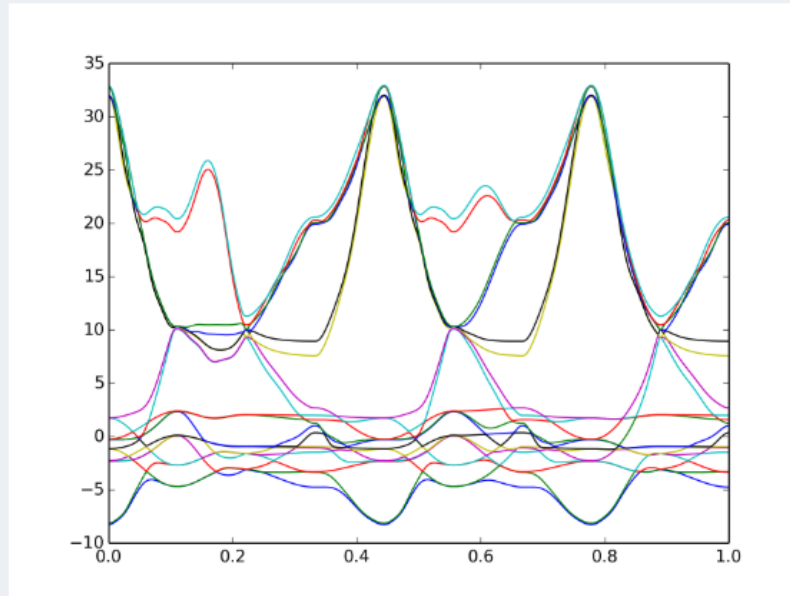
#0008

input

analysis

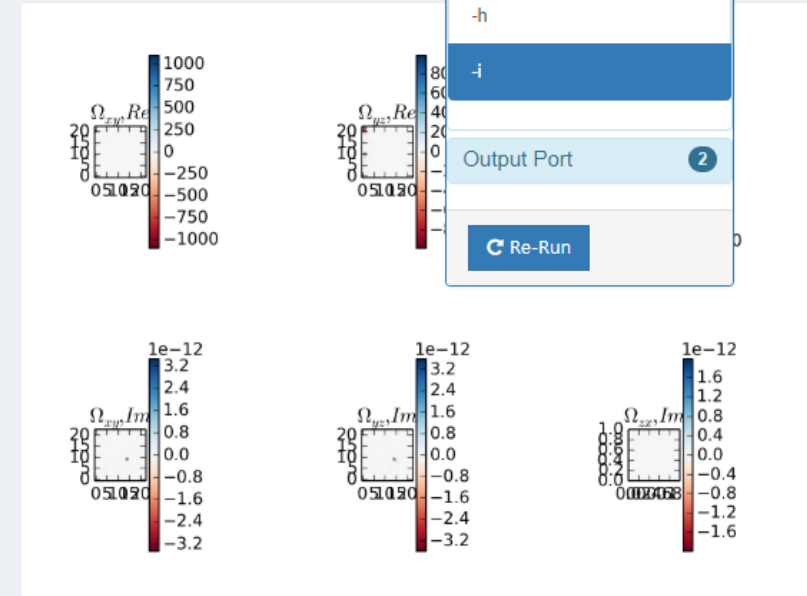
/Band Structure.png

Menu ▾



/Berrycurvature.png

Menu ▾



An Analyzer from A User

Bcoil

1.0.0

Manual

New Simulation

test

#0003

#0002

#0001

test

MY EDISON

Bcoil

test

#0003

입력

분석

A

R = 0.2 m

z = 0.2 m

coil2

x = 0 m

y = 0 m

I = 1 A

R = 0.2 m

z = 0.1 m

coil3

x = 0 m

y = 0.21 m

I = 1 A

R = 0.2 m

z = 0 m

multi coil1

x = -0.19 m

y = 0 m

I = 1 A

R = 0.2 m

z = -0.1 m

N = 5

$\Delta z = 0.01$ m

multi coil2

x = 0 m

y = 0 m

I = 1 A

Port Selector

입력 포트 1

출력 포트 1

html

Re-Run

3D plot showing magnetic field lines (B) in the x-y-z space. The axes are labeled x(m), y(m), and z(m). The field lines are colored (yellow, green, blue, red) and form loops around the coils.



What's Next?



- Flexible Web-based Workflow
- Provide Some high quality editors and analyzers
- Deploy well-known open sources
 - Decompose open sources to modules or algorithms
- Deploy web-based commercial tools