

Setup settings

Load data

Find solution line for first datapoint

Finding a solution point

Employ First dataset
(z, theta)

Pick a random
wa and wp

Calculated $d(z, wa, wp)$ not within
the expected d from the data

True

Calculate neighbouring
points of wa, wp at a distance step
(denoted as wa_n, wp_n)

Calculate $d(z, wa_n, wp_n)$

$d(z, wa, wp)$ is greater
than the d from
the data

False

Find the Highest $d(z, wa_n, wp_n)$

Find the Lowest $d(z, wa_n, wp_n)$

Previously $d(z, wa_n, wp_n)$
was greater than
the d from the data

True

Reduce the step size
dividing it by 5

False

Change wa to wa_n
and wp to wp_n

False

Obtain the wa and wp points
with the final stepsize

Create a list
of wa, wp values
Append the wa and wp
calculated previously

Save the wa and wp
values as waf and wpf

Find solution line

wa and wp
within desired range

True

Calculate neighbouring points
(denoted wa_n, wp_n)

Load first wa_n, wp_n

Not last
neighbour

True

wa_n and wp_n have
not been saved yet
&
wa_n is greater than wa

False

move to next point

wa_n and wp_n are
within the tolerance of d from the data

True

Save wa_n and wp_n
and change the current wa and wp
to wa_n and wp_n

wa_n and wp_n have
not been saved yet
&
wa_n is smaller than wa

True

move to next point

$d(z, wa_n, wp_n)$ is within
the tolerance of d from the data

True

Save wa_n and wp_n
and change the current wa and wp
to wa_n and wp_n

wa_n and wp_n have
not been saved yet
&
wa_n is smaller than wa

True

move to next point

$d(z, wa_n, wp_n)$ is within
the tolerance of d from the data

True

Save wa_n and wp_n
and change the current wa and wp
to wa_n and wp_n

wa_n and wp_n have
not been saved yet
&
wa_n is smaller than wa

True

move to next point

$d(z, wa_n, wp_n)$ is within
the tolerance of d from the data

True

Save wa_n and wp_n
and change the current wa and wp
to wa_n and wp_n

wa_n and wp_n have
not been saved yet
&
wa_n is smaller than wa

True

move to next point

$d(z, wa_n, wp_n)$ is within
the tolerance of d from the data

True

Save wa_n and wp_n
and change the current wa and wp
to wa_n and wp_n

wa_n and wp_n have
not been saved yet
&
wa_n is smaller than wa

True

move to next point

$d(z, wa_n, wp_n)$ is within
the tolerance of d from the data

True

Save wa_n and wp_n
and change the current wa and wp
to wa_n and wp_n

wa_n and wp_n have
not been saved yet
&
wa_n is smaller than wa

True

move to next point

wa and wp
within desired range

True

Calculate neighbouring points
(denoted wa_n, wp_n)

Load first wa_n, wp_n

Not last
neighbour

True

wa_n and wp_n have
not been saved yet
&
wa_n is greater than wa

False

move to next point

wa_n and wp_n are
within the tolerance of d from the data

True

Save wa_n and wp_n
and change the current wa and wp
to wa_n and wp_n

wa_n and wp_n have
not been saved yet
&
wa_n is smaller than wa

True

move to next point

$d(z, wa_n, wp_n)$ is within
the tolerance of d from the data

True

Save wa_n and wp_n
and change the current wa and wp
to wa_n and wp_n

wa_n and wp_n have
not been saved yet
&
wa_n is smaller than wa

True

move to next point

$d(z, wa_n, wp_n)$ is within
the tolerance of d from the data

True

Save wa_n and wp_n
and change the current wa and wp
to wa_n and wp_n

wa_n and wp_n have
not been saved yet
&
wa_n is smaller than wa

True

move to next point

$d(z, wa_n, wp_n)$ is within
the tolerance of d from the data

True

Save wa_n and wp_n
and change the current wa and wp
to wa_n and wp_n

wa_n and wp_n have
not been saved yet
&
wa_n is smaller than wa

True

move to next point

$d(z, wa_n, wp_n)$ is within
the tolerance of d from the data

True

Save wa_n and wp_n
and change the current wa and wp
to wa_n and wp_n

wa_n and wp_n have
not been saved yet
&
wa_n is smaller than wa

True

move to next point

$d(z, wa_n, wp_n)$ is within
the tolerance of d from the data

True

Save wa_n and wp_n
and change the current wa and wp
to wa_n and wp_n

wa_n and wp_n have
not been saved yet
&
wa_n is smaller than wa

True

move to next point

Check solution line against other datapoints

Load all saved wa
and wp pairs

Load data
(z and theta)

Not last datapoint

True

First wa and wp pair

Not last wa,wp

True

Perform an r^2 test against
 $d(z, wa, wp)$ and the value theta
and z from the data

Next wa wp pair

Load the lowest value obtained for the r^2 test

the wa and wp pair with lowest r^2 value

Not last wa wp pair

True

Calculate the difference between
d from the data and all $d(z, wa, wp)$

Difference is smaller
than the tolerance

True

Remove the wa and wp point
to a filtered list

Advance to next point

increase the tolerance by 1%

Filtered list is empty

True

Filtered list has not changed

True

Decrease the tolerance by 1%

reset filtered list

Next datapoint

find a general solution

r^2 test

Load first wa and wp from the filtered list

Not last wa,wp

True

Perform an r^2 test against
 $d(z, wa, wp)$ and the value theta
and z from the data

Next wa wp pair

Load the lowest value obtained for the r^2 test

the wa and wp pair with lowest r^2 value

Not last wa,wp

True

Perform an r^2 test against
 $d(z, wa, wp)$ and the value theta
and z from the data

Next wa wp pair

Load the lowest value obtained for the r^2 test

the wa and wp pair with lowest r^2 value