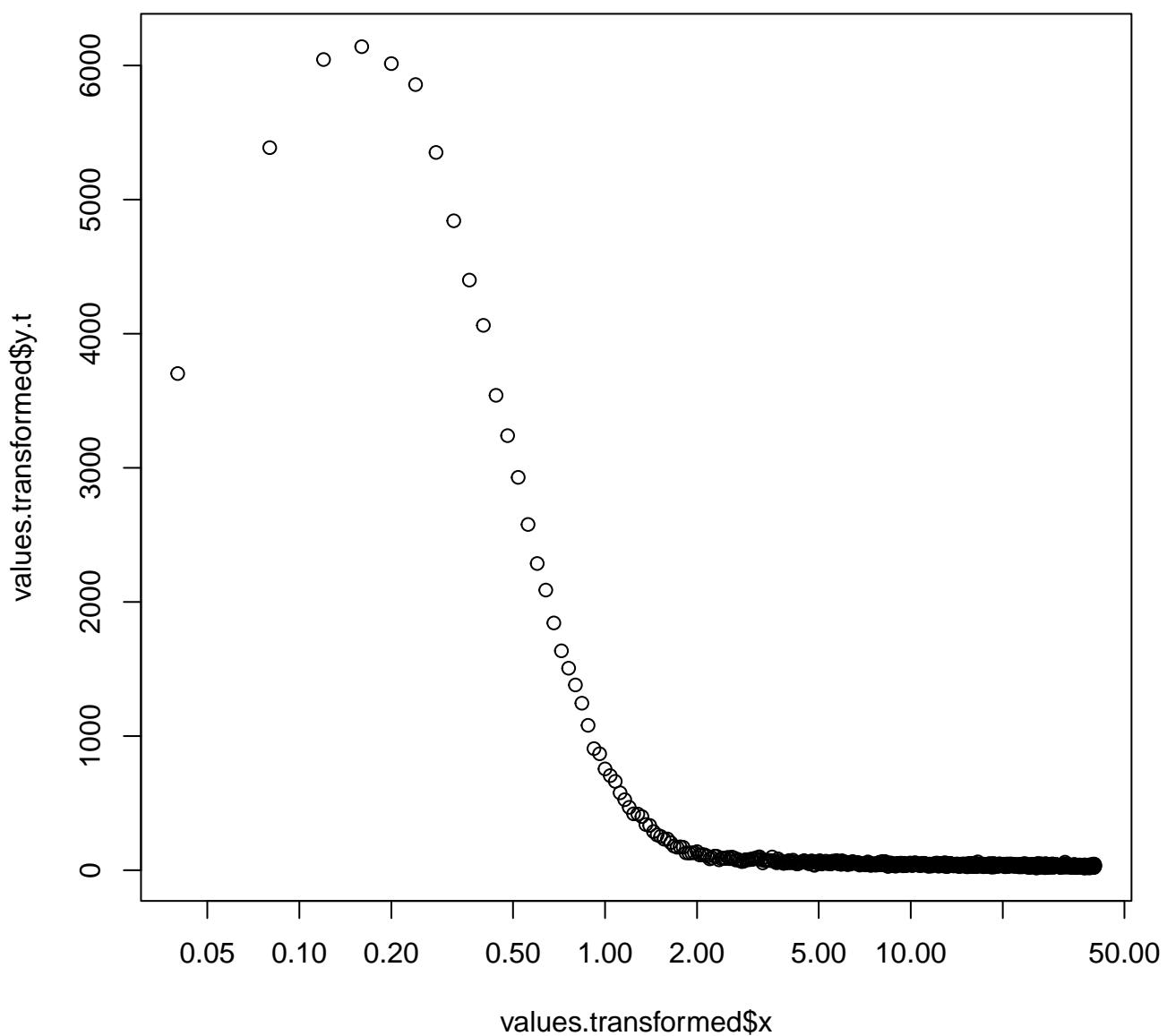


help("CW2pHMi")



help("CW2pHMi")

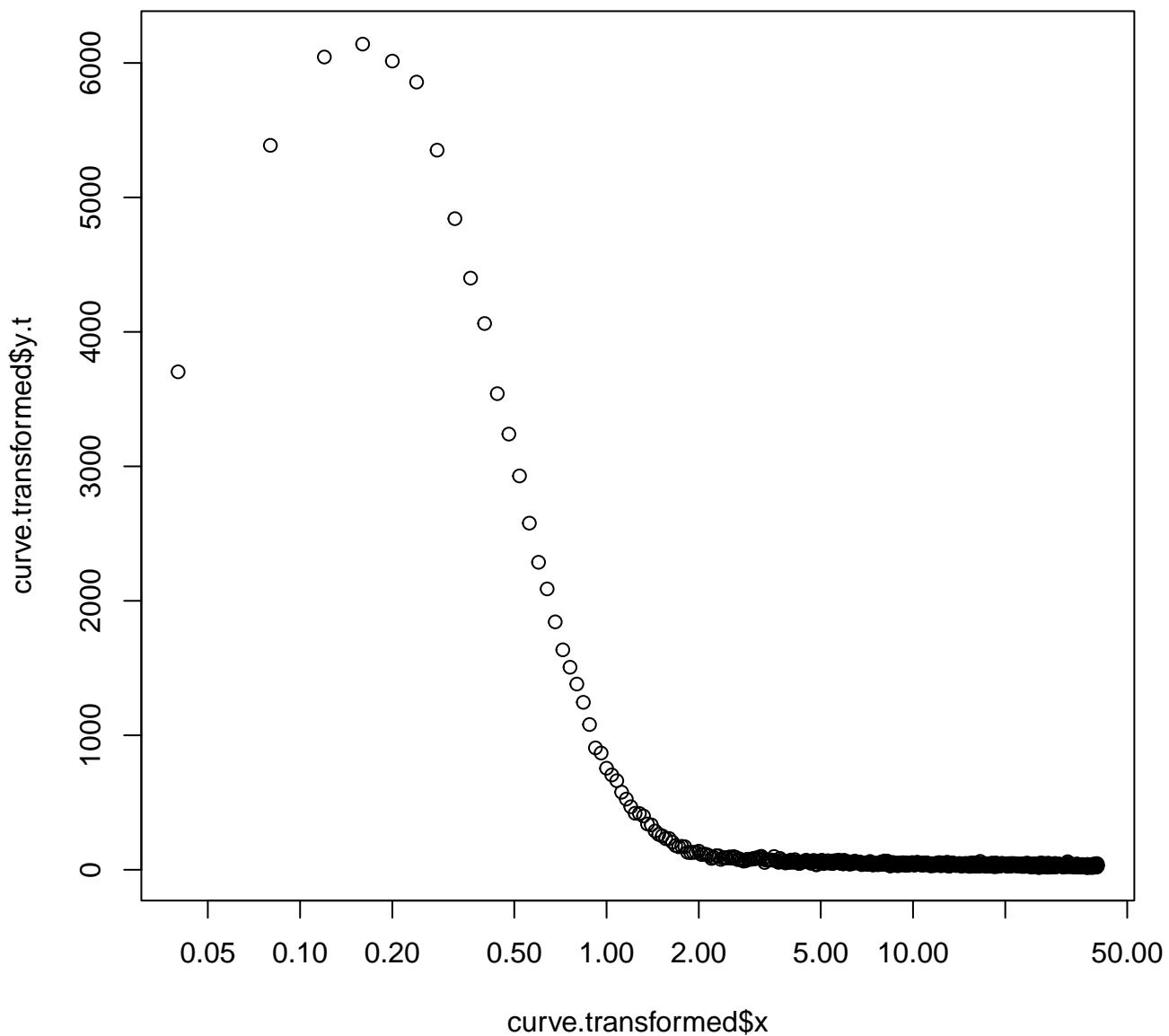
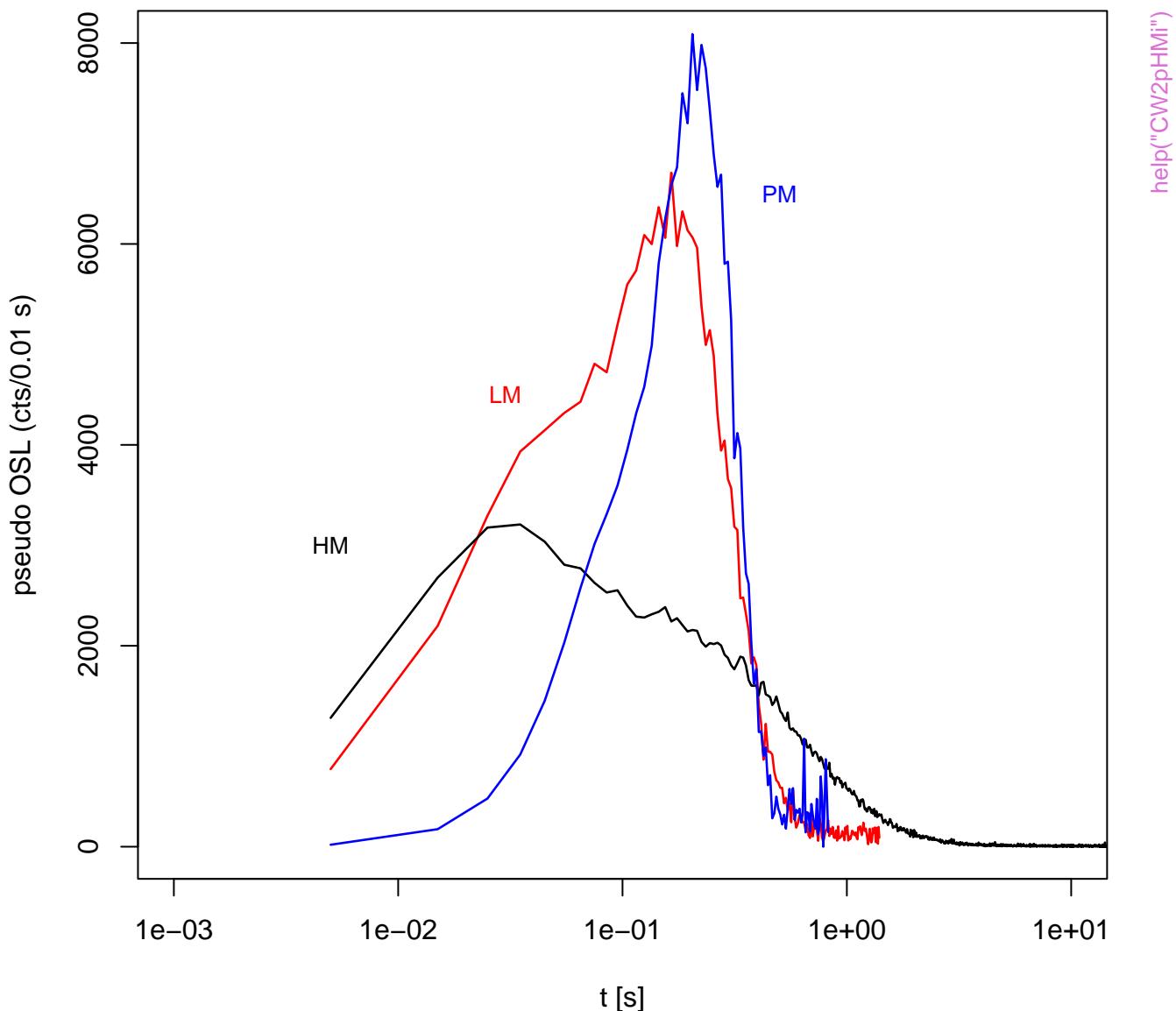
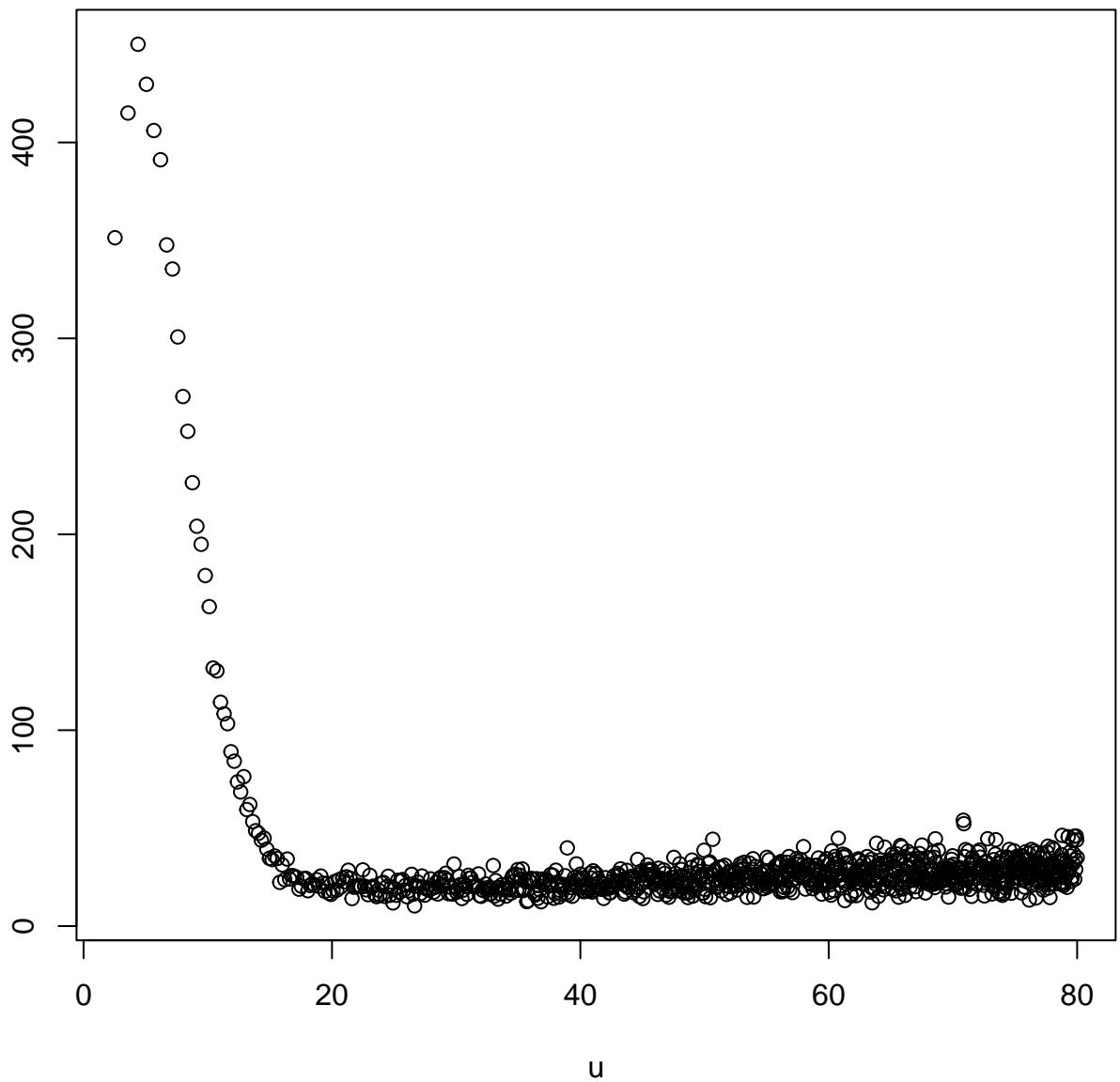


Fig. 4 – Bos & Wallinga (2012)



temp.values...2.



help("CW2pLM")

help("CW2pLMi")

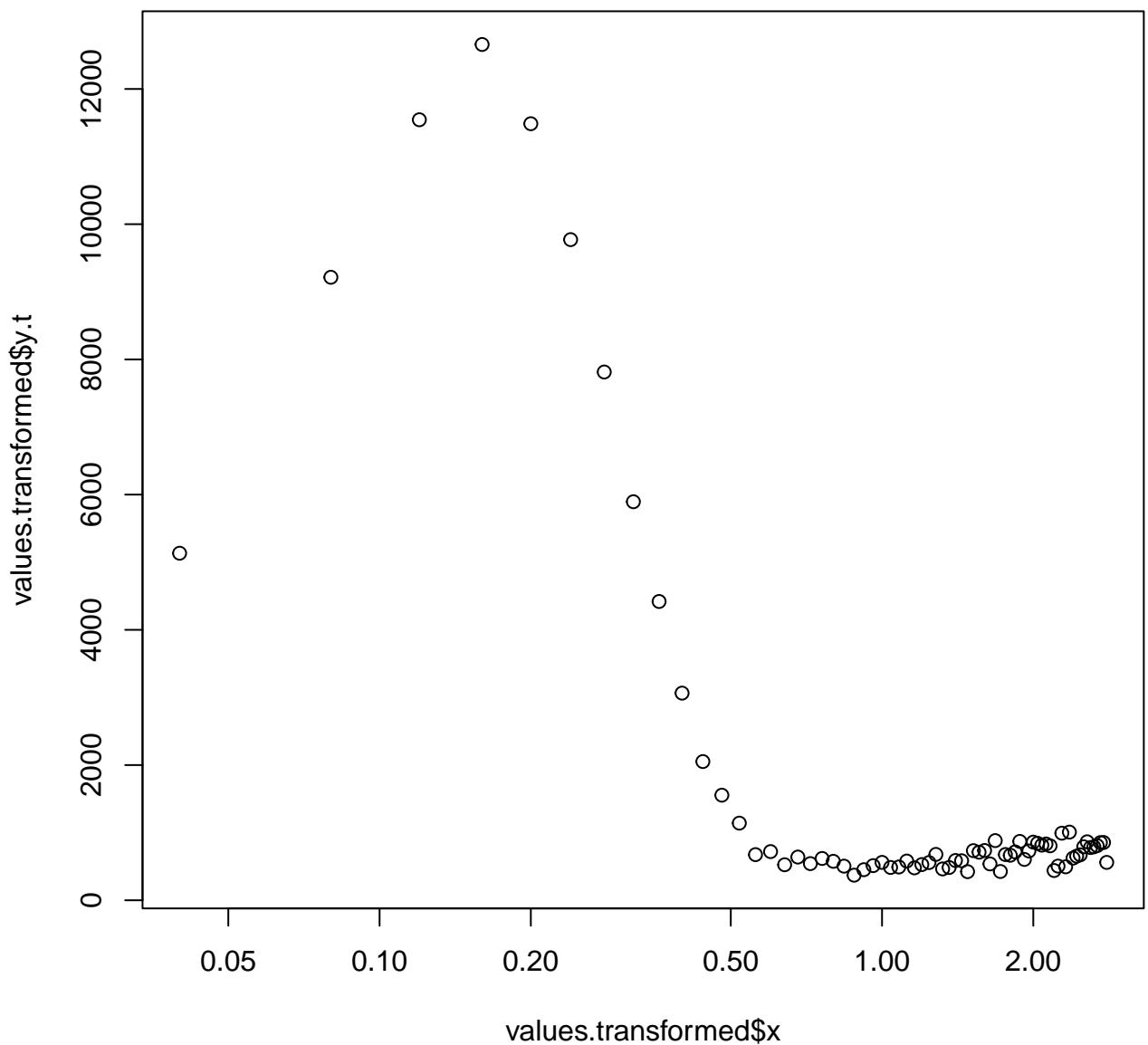
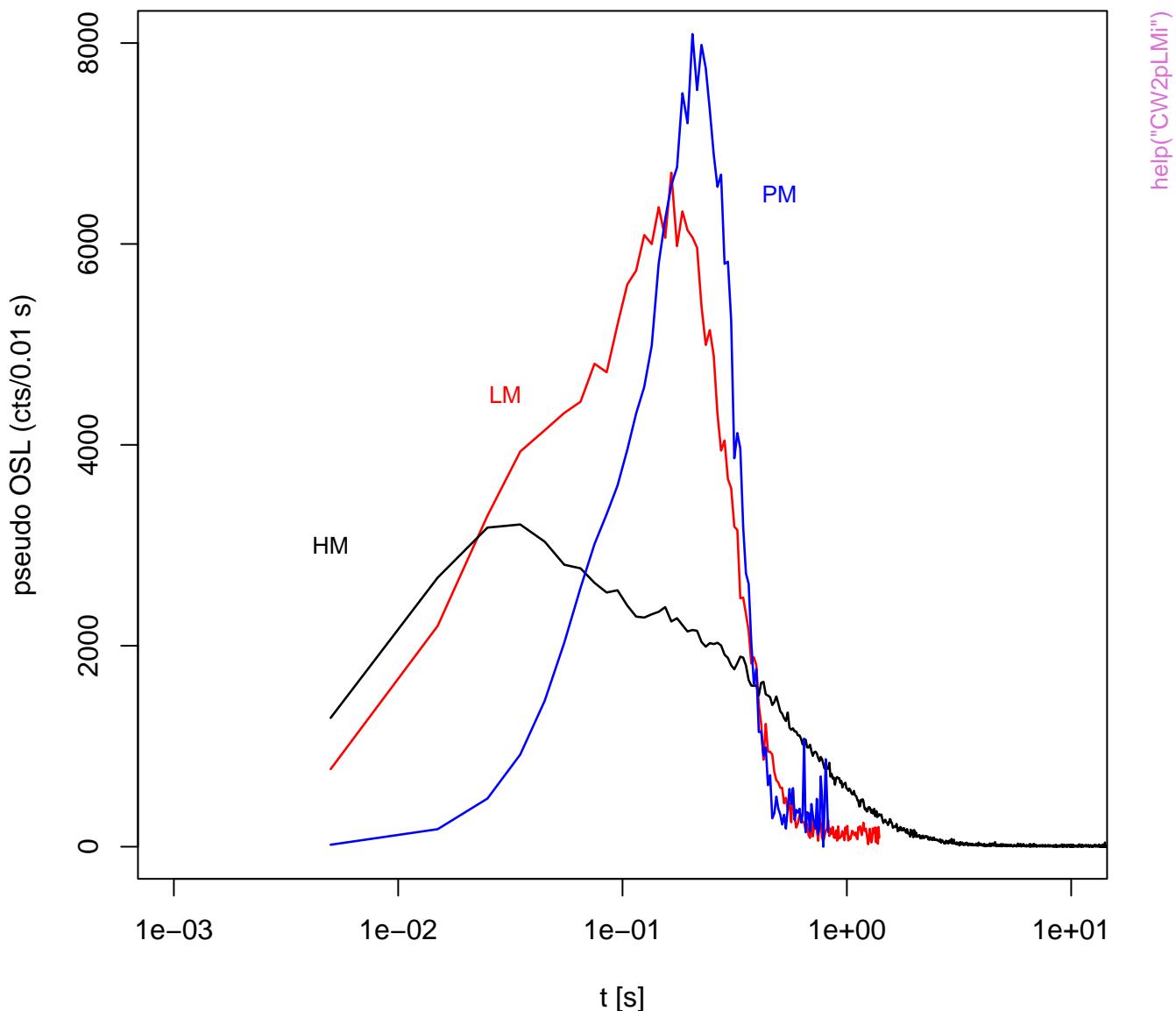


Fig. 4 – Bos & Wallinga (2012)



help("CW2pPMi")

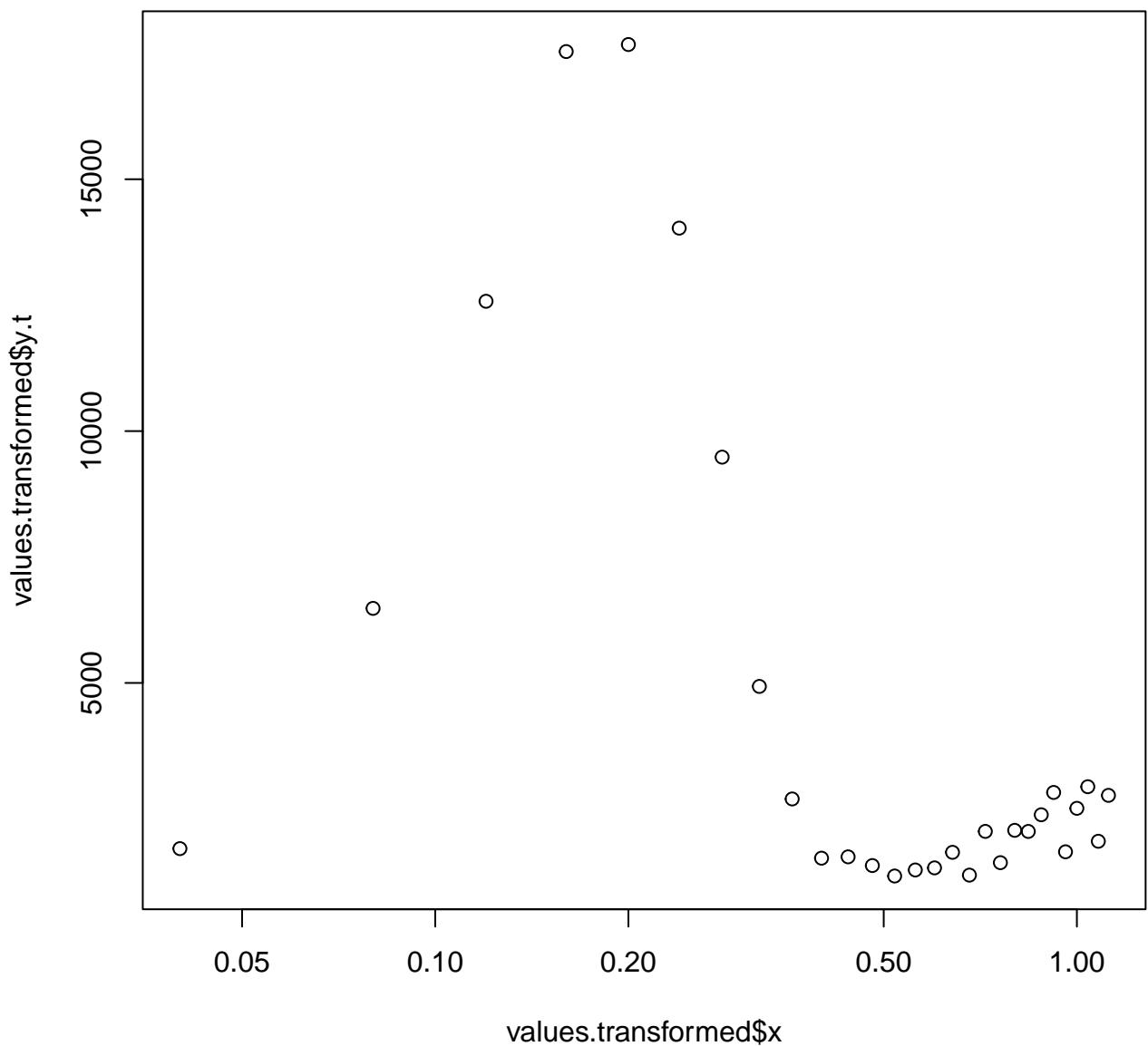
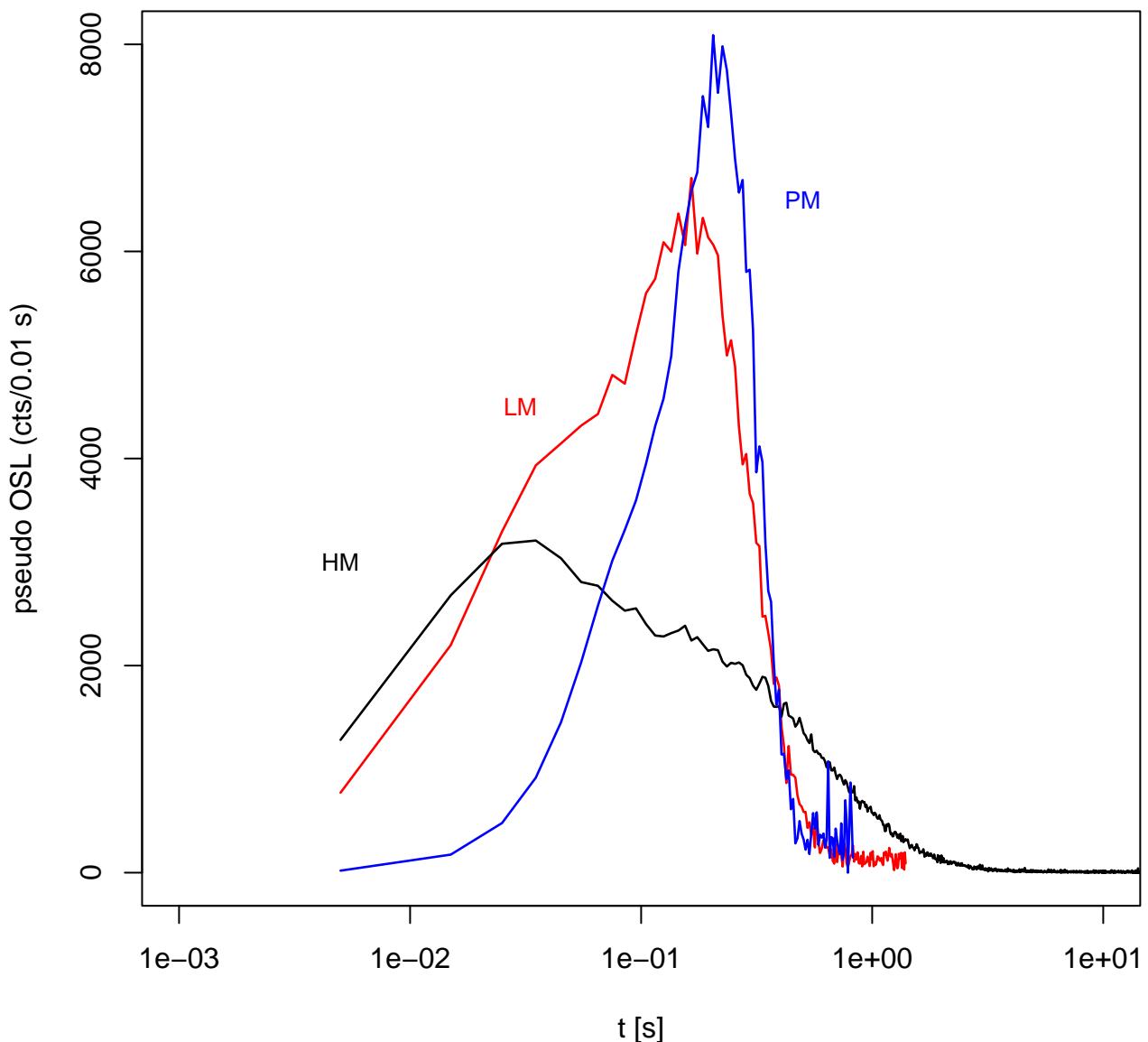


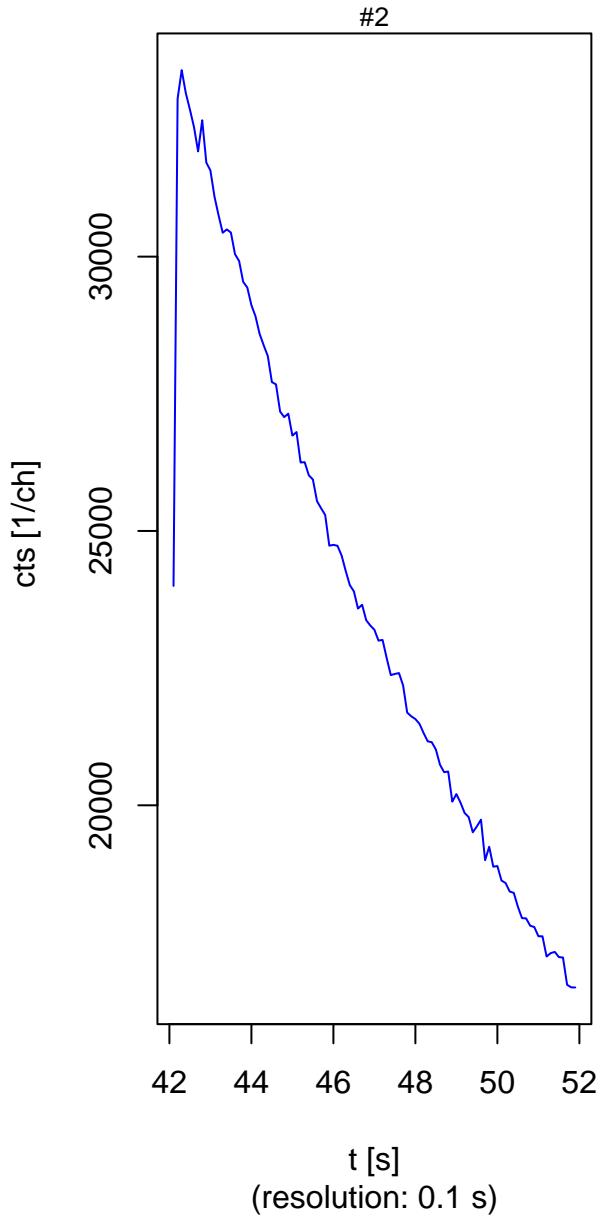
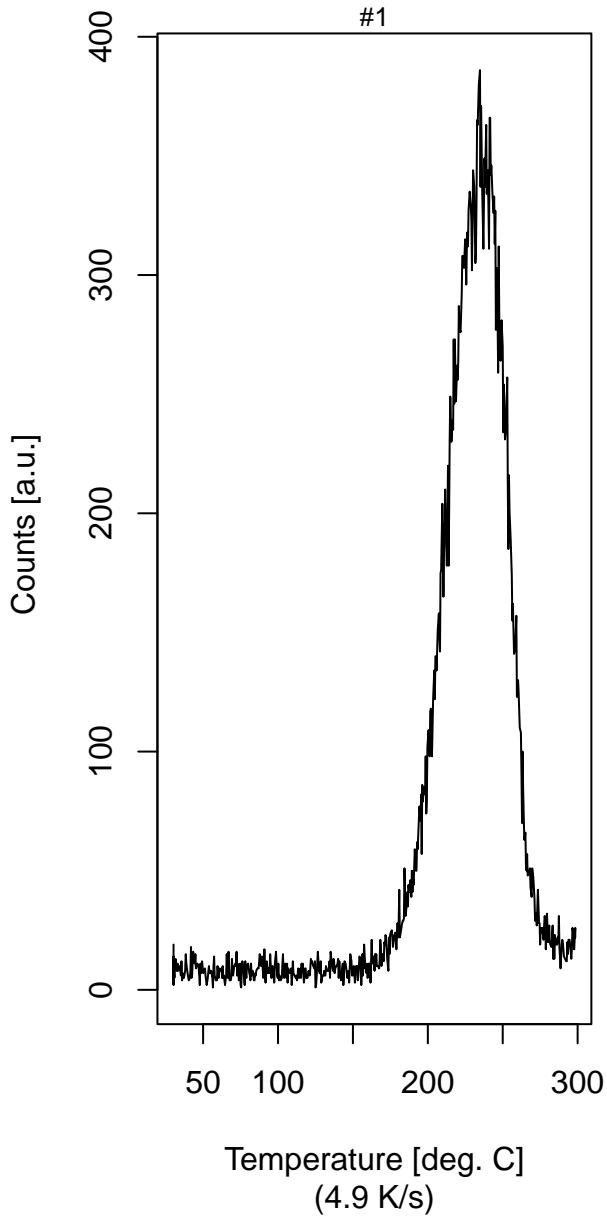
Fig. 4 – Bos & Wallinga (2012)



help("CW2pPMi")

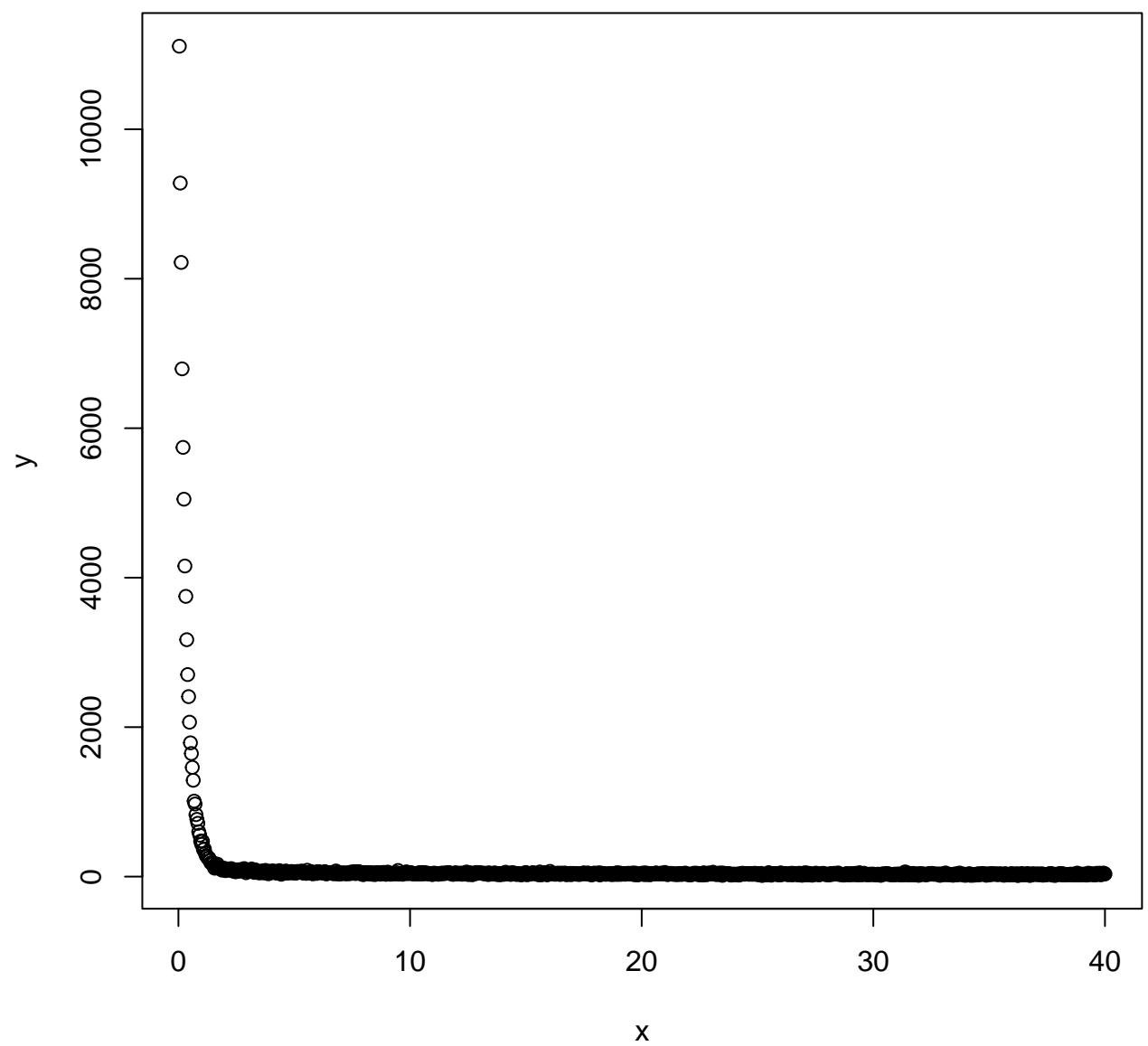
TL (UVVIS)

OSL (UVVIS)

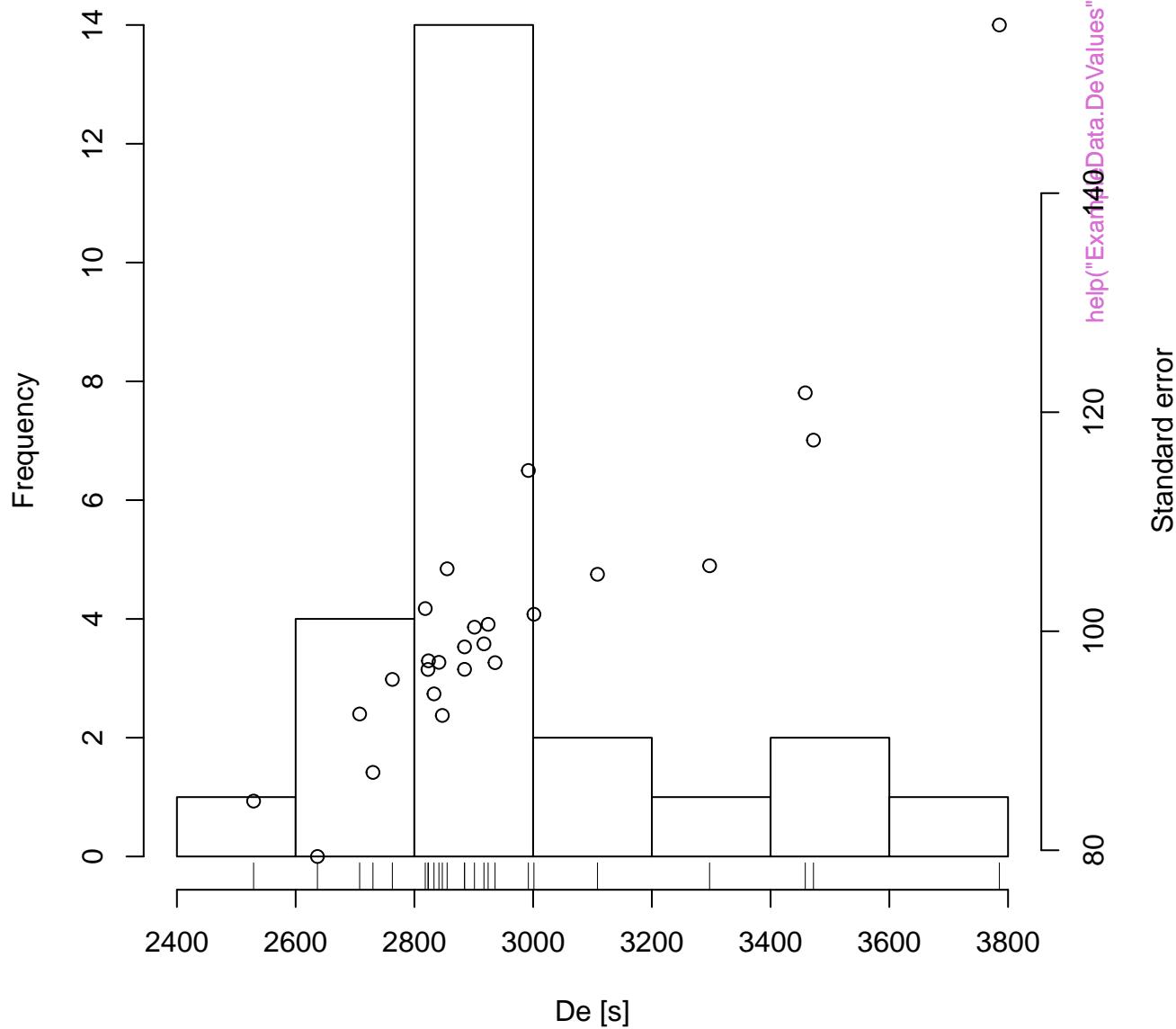


help("ExampleData.Al2O3C")

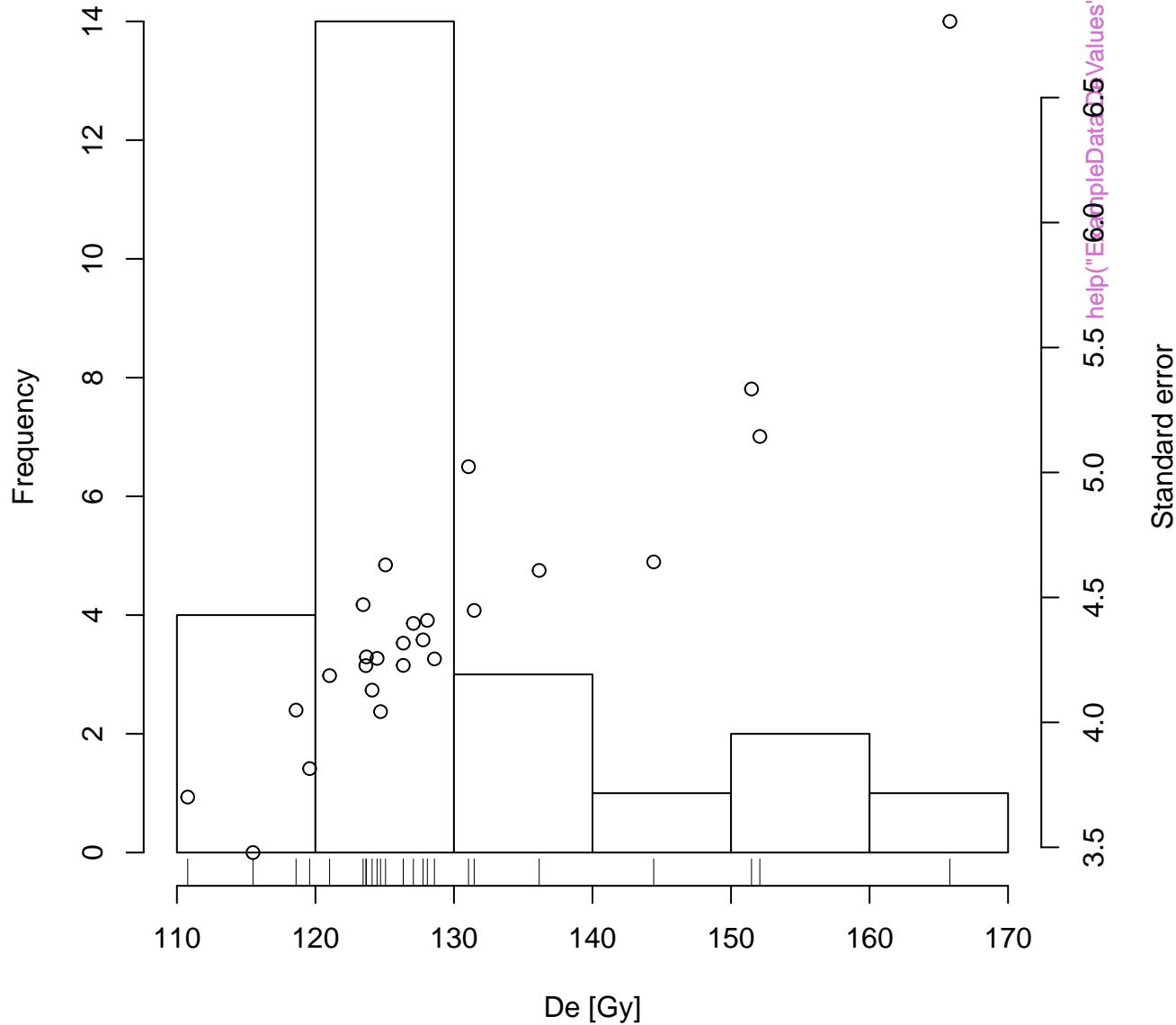
```
help("ExampleData.CW_OSL_Curve")
```



Histogram



Histogram

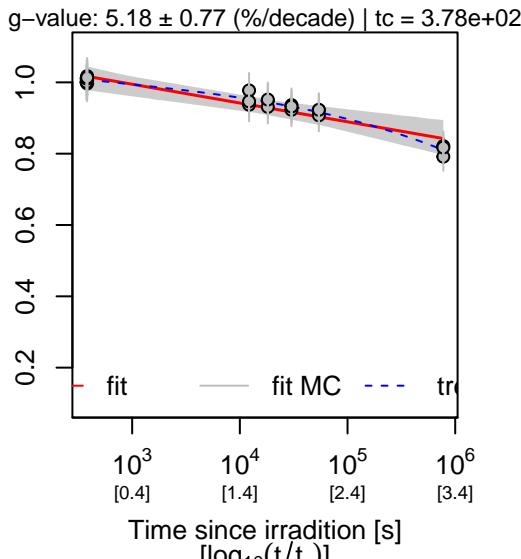


help("ExampleData.Fading")

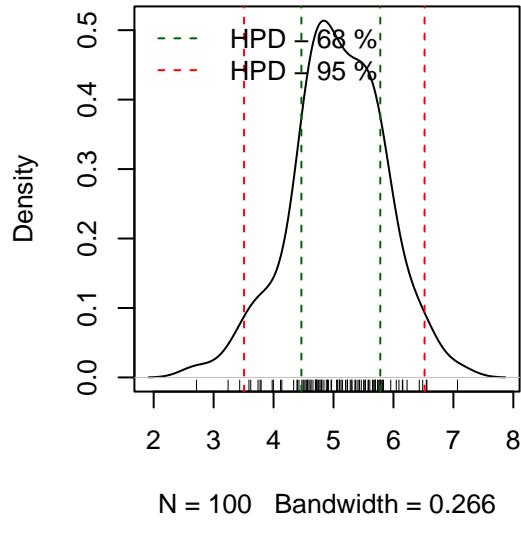
No L_x curves detected

No T_x curves detected

Signal Fading

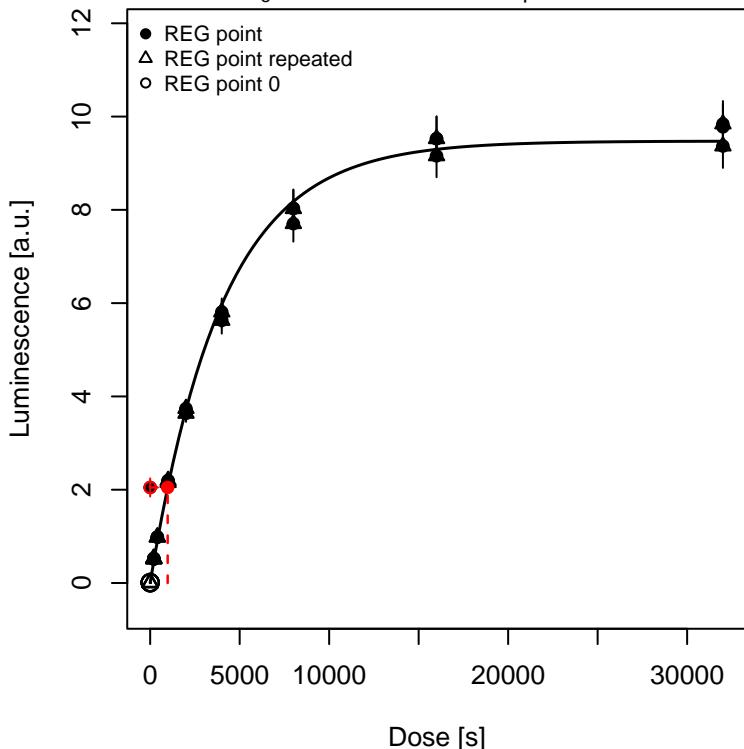


Density: g-values (%/decade)



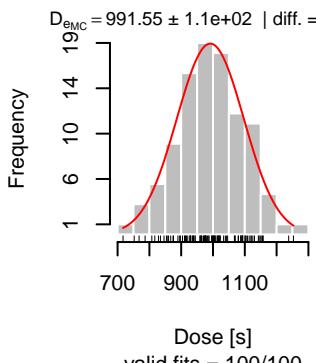
Dose-response curve

$D_e = 977.38 \pm 1.1e+02$ | fit: EXP

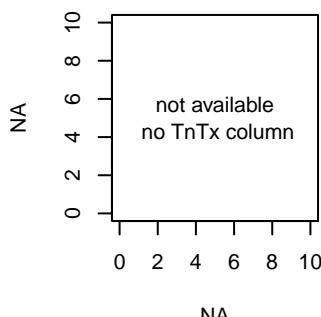


MC runs

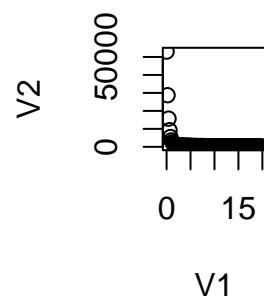
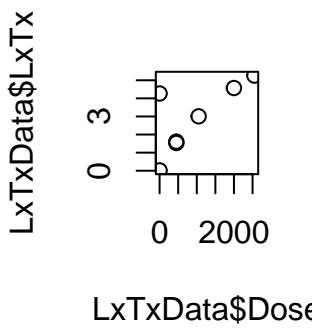
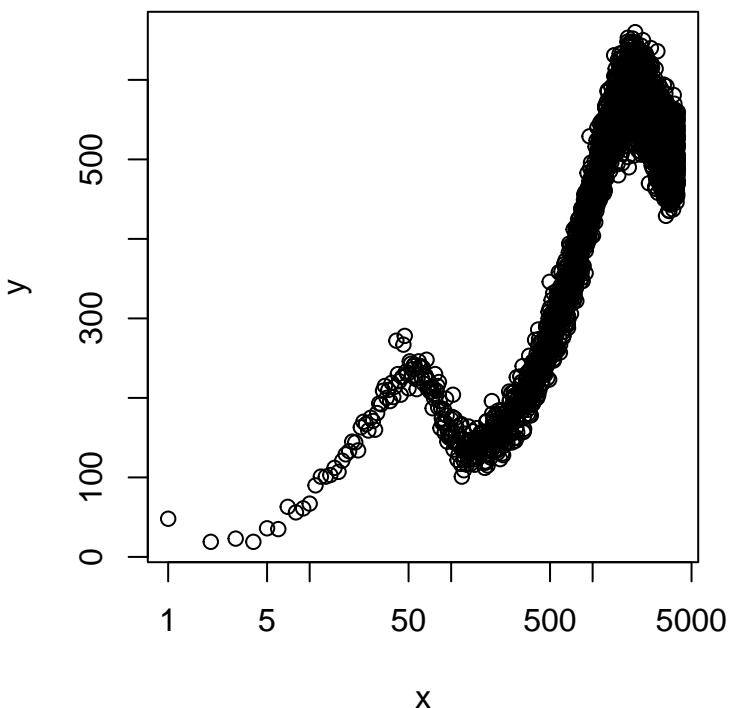
$D_{eMC} = 991.55 \pm 1.1e+02$ | diff. = 1.4 %

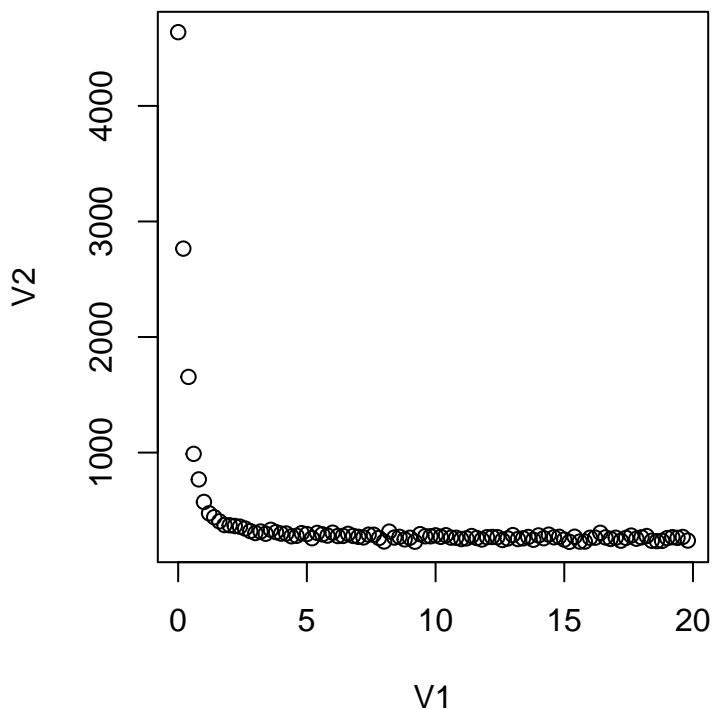


Test-dose response

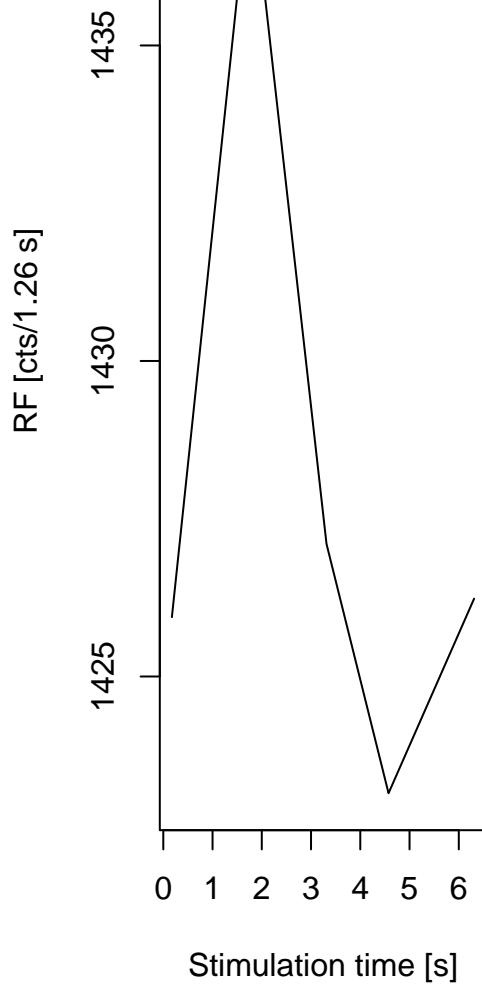


valid fits = 100/100

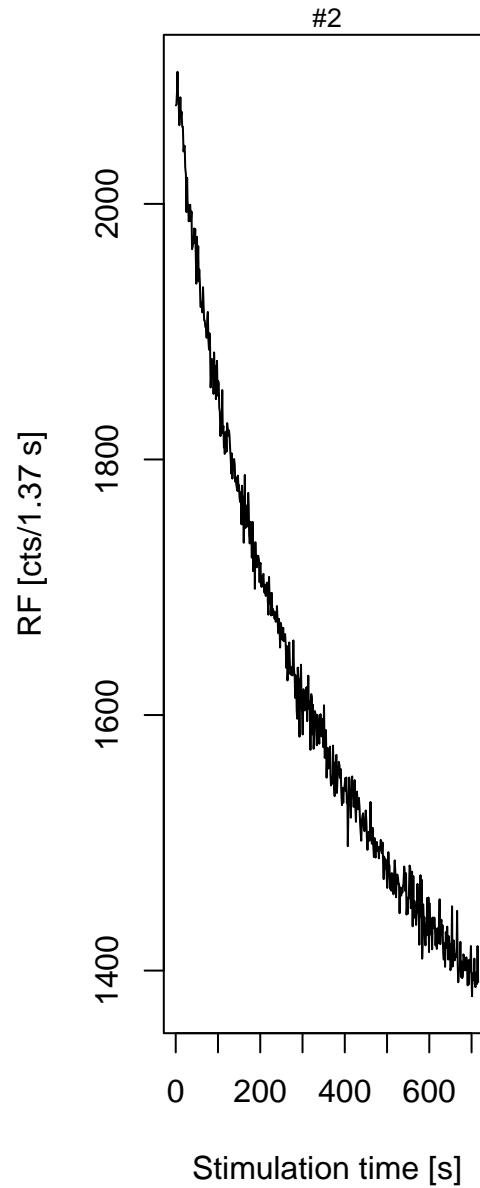




RF

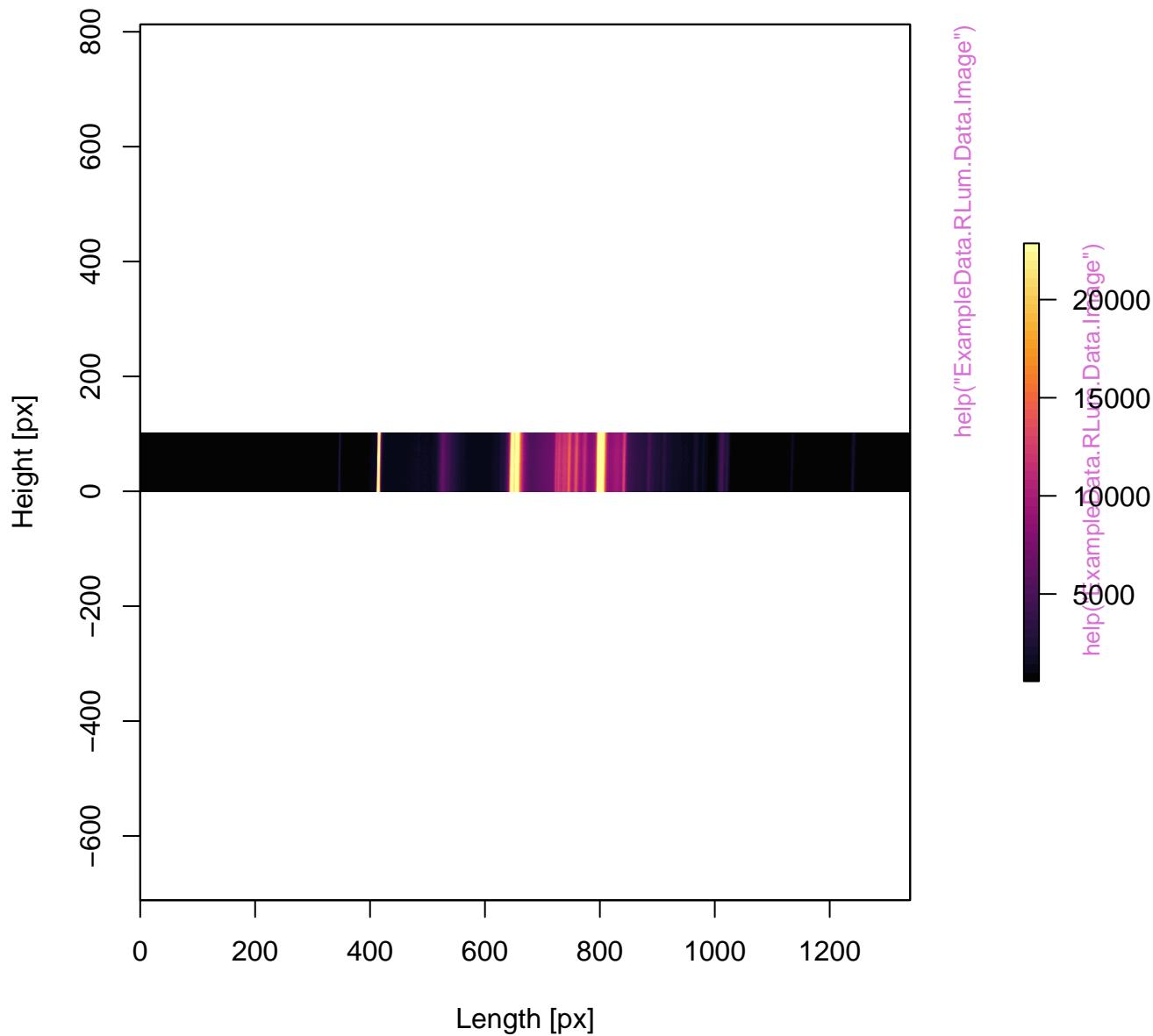


RF

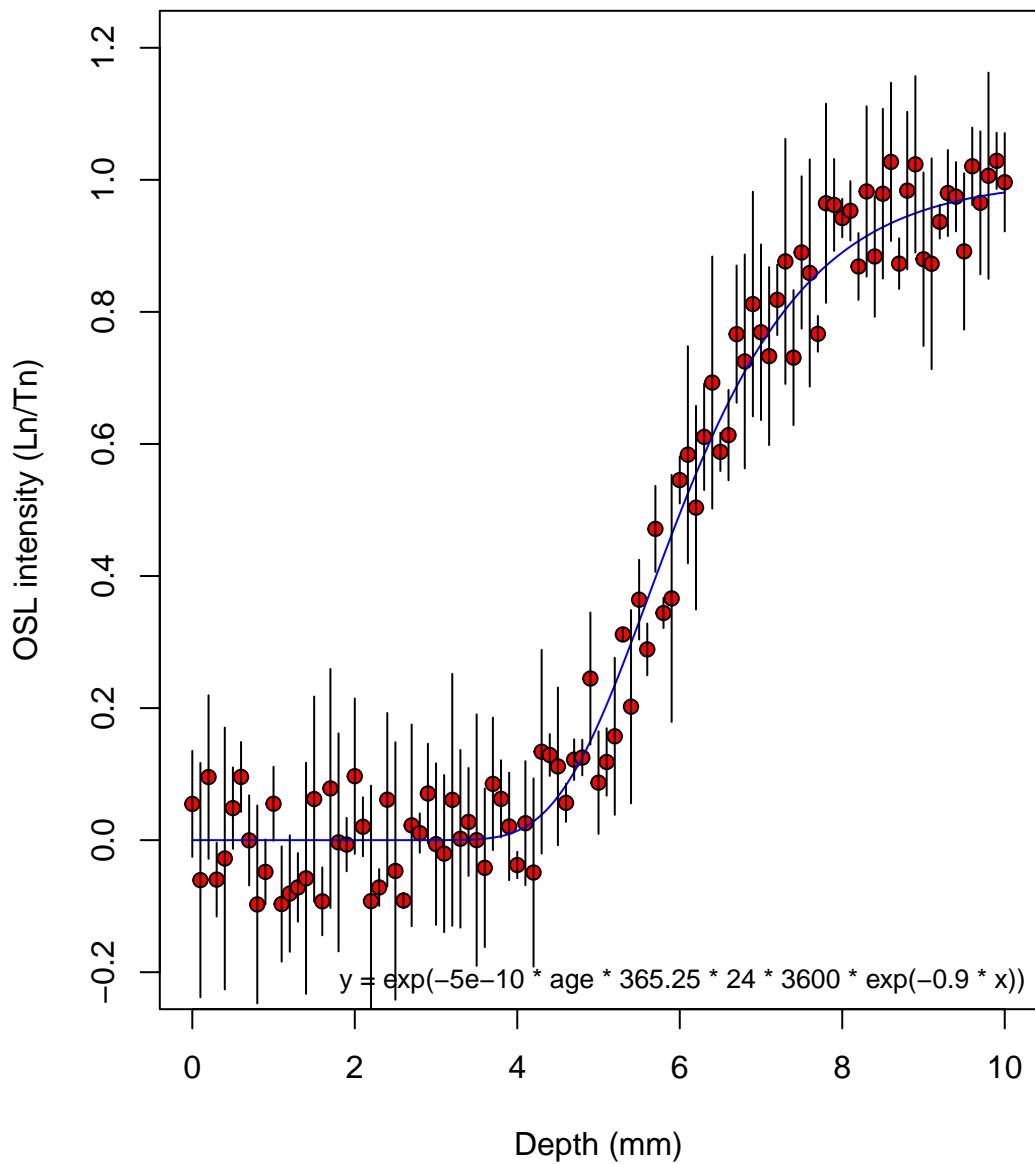


help("ExampleData.RLum.Analysis")

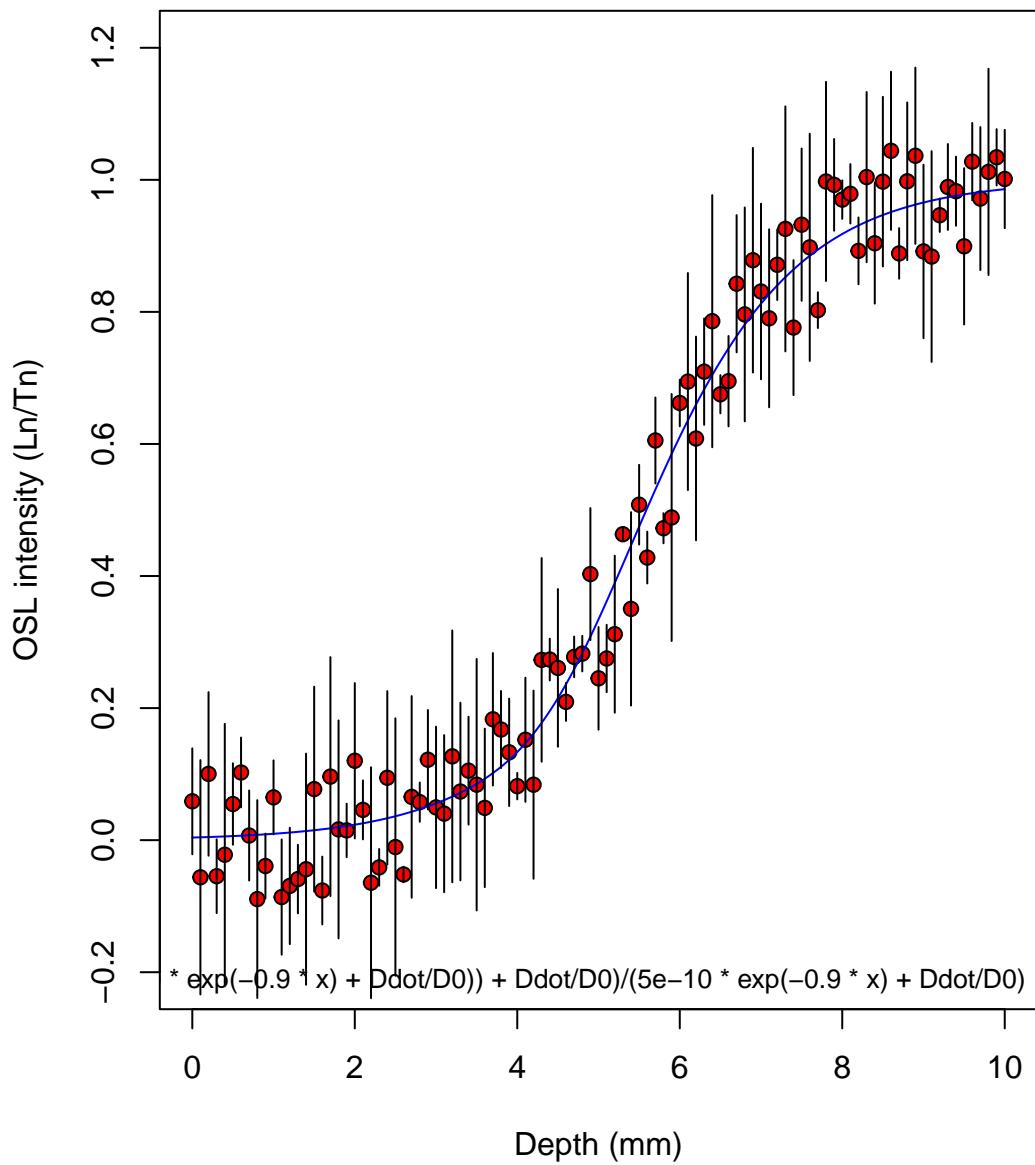
RLum.Data.Image # 1



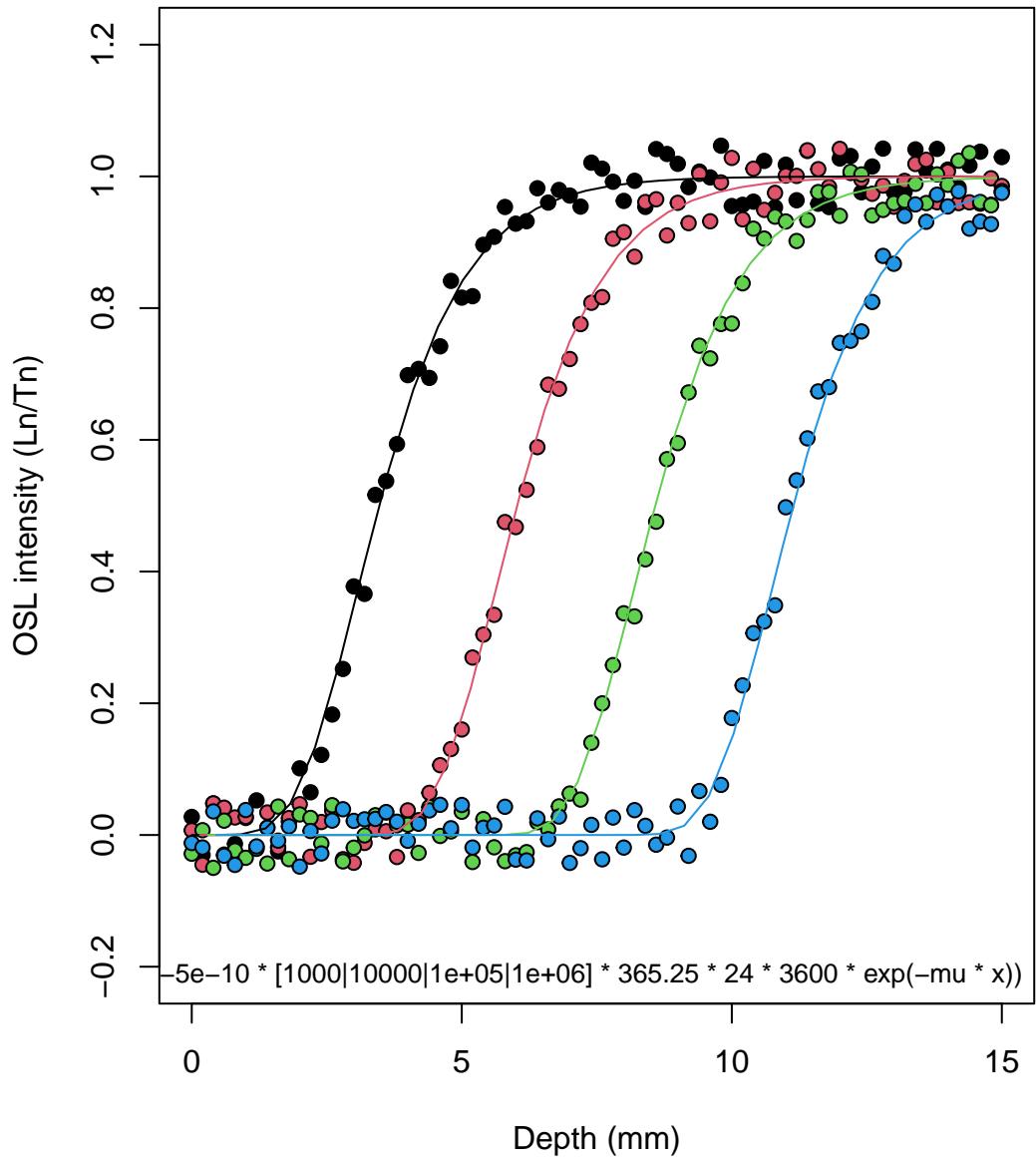
help("ExampleData.SurfaceExposure")



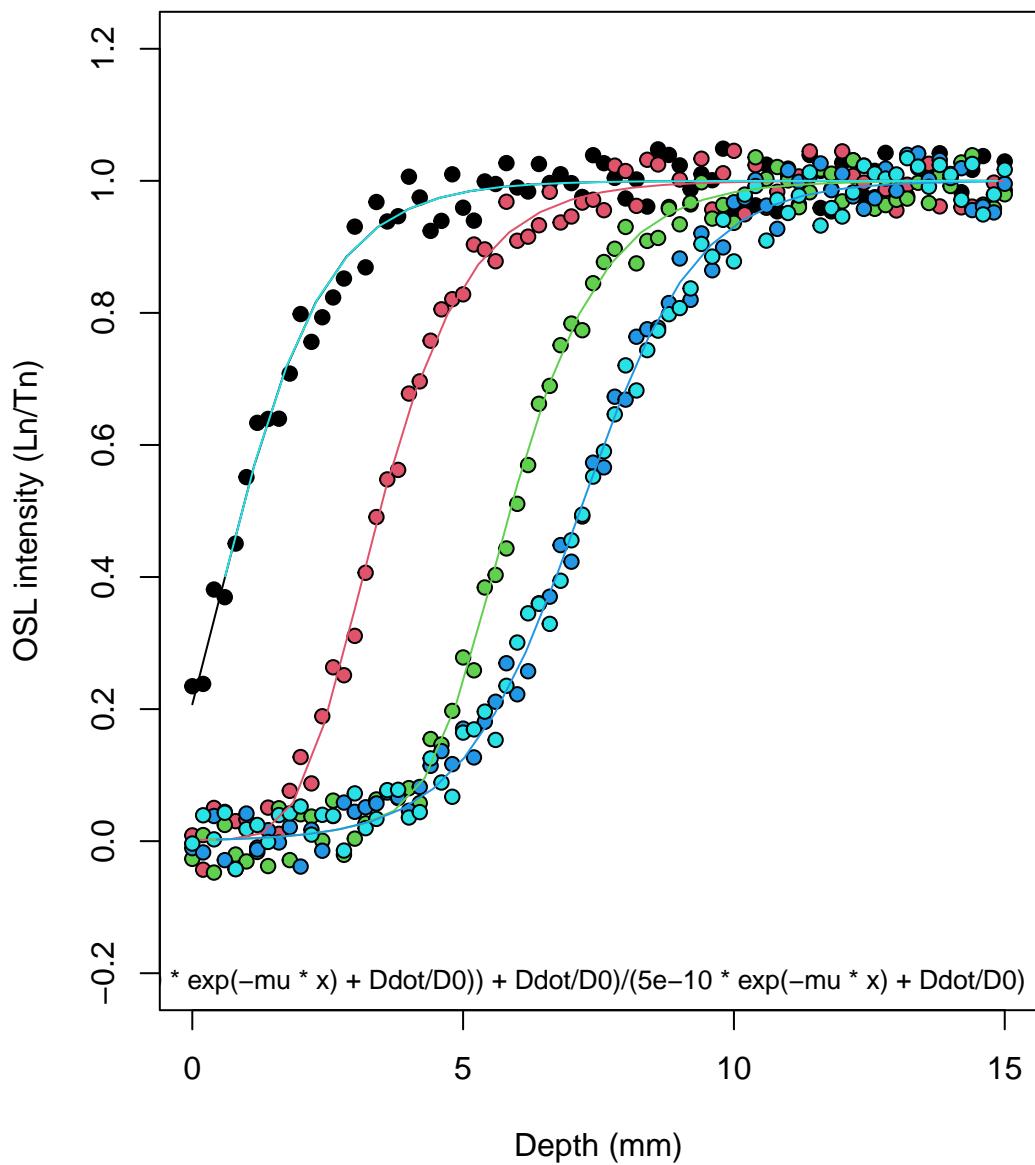
help("ExampleData.SurfaceExposure")



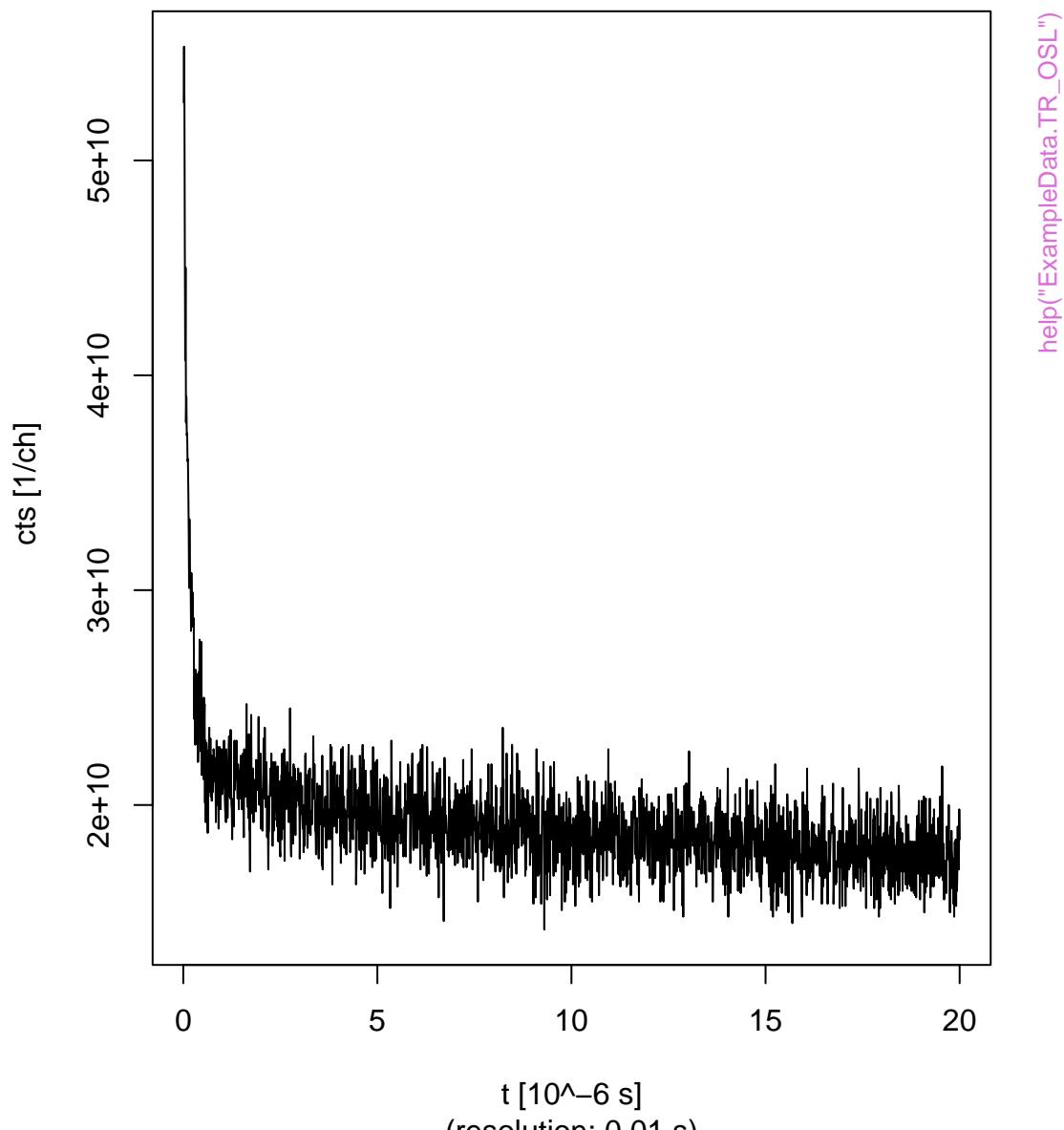
help("ExampleData.SurfaceExposure")



help("ExampleData.SurfaceExposure")

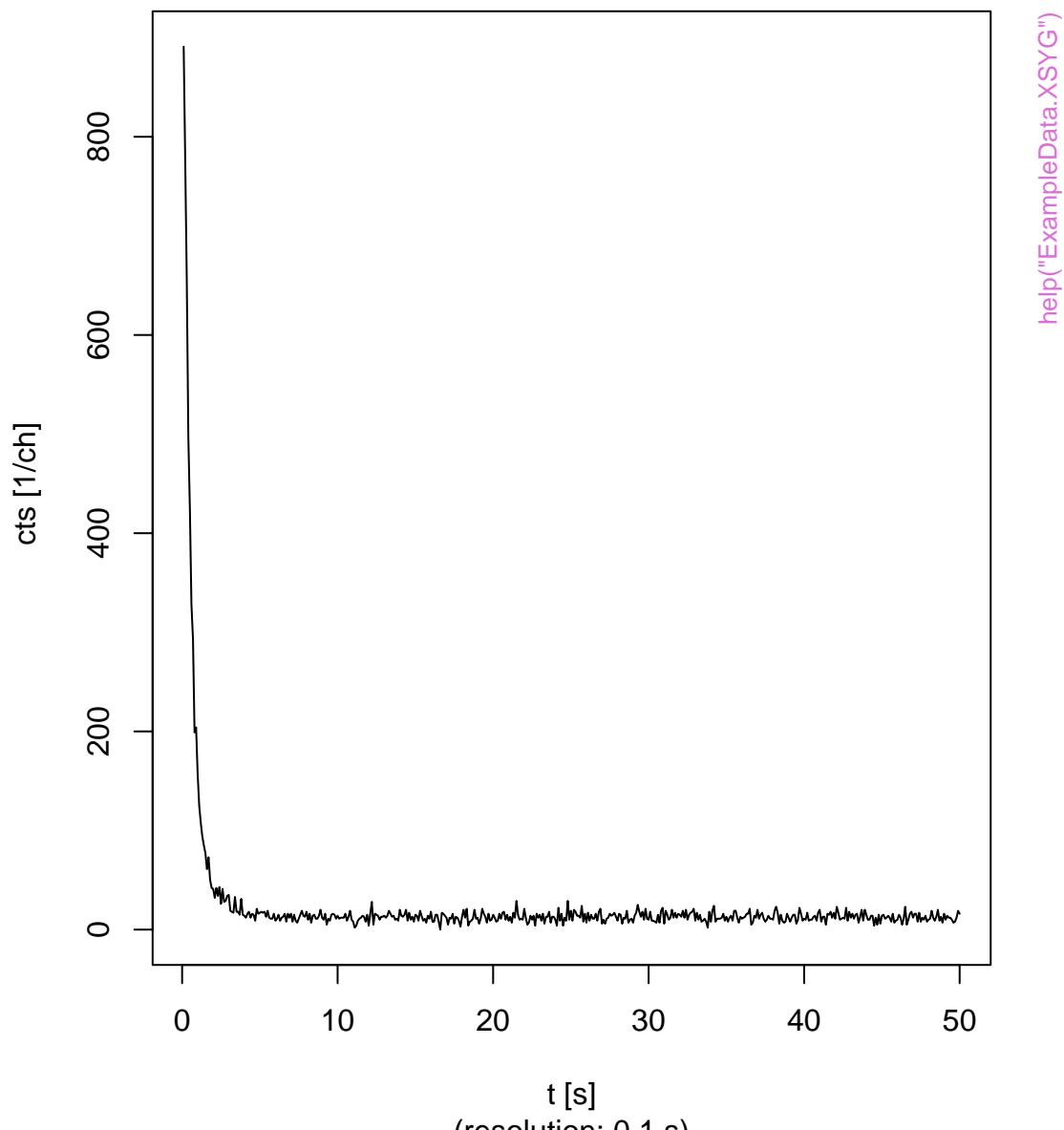


POSL (UVVIS)

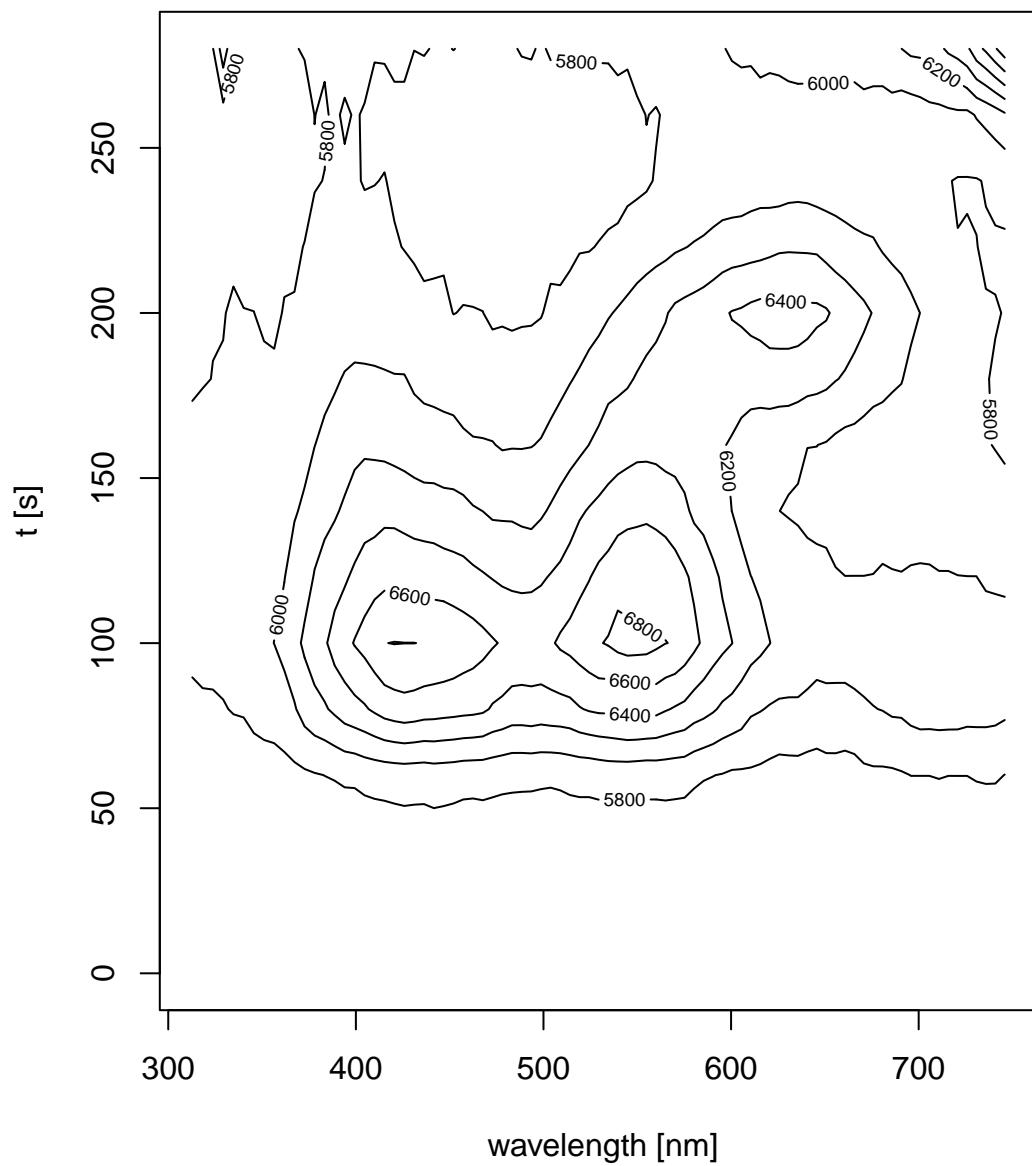


help("ExampleData.TR_OSL")

OSL (UVVIS)



RLum.Data.Spectrum



help("ExampleData.XSYG")

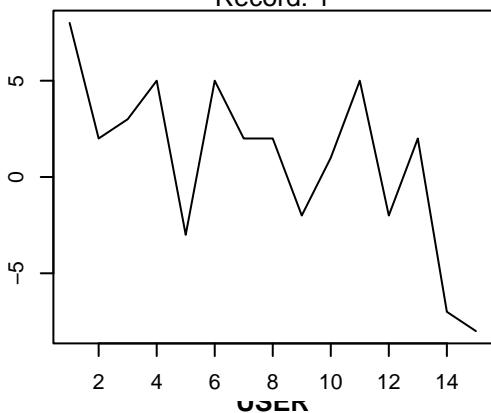
USER

IRSL

Record: 1

Record: 1

Dependent [Unknown]



Record: 1

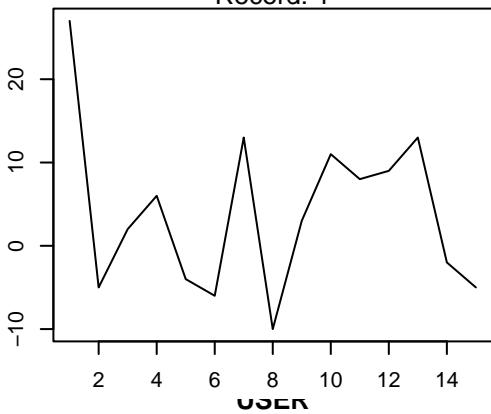
IRSL

IRSL [sec : s]



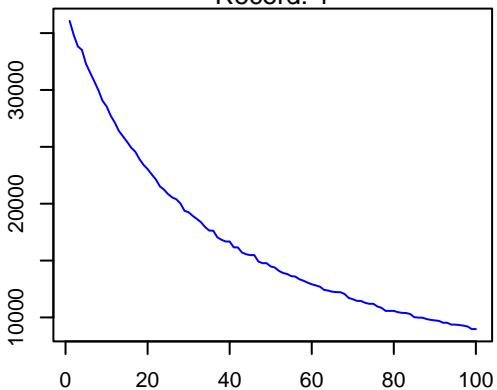
Record: 1

Dependent [Unknown]

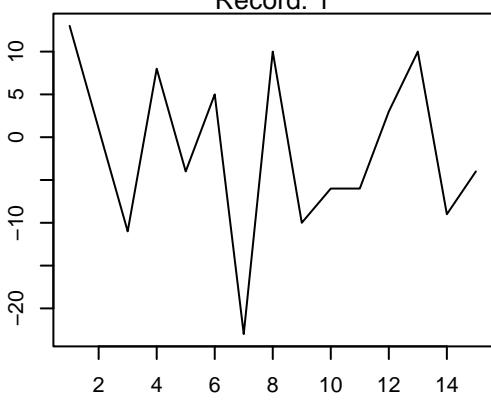


Record: 1

OSL [sec : s]



Dependent [Unknown]



help("ExampleData.portableOSL")

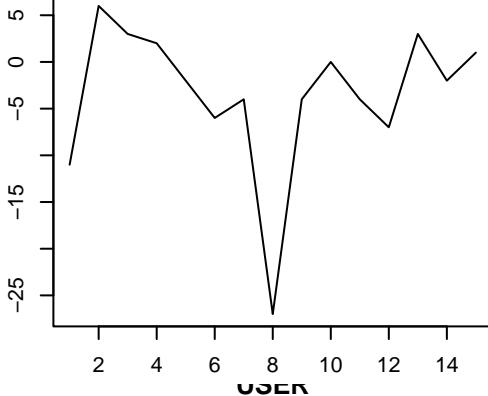
USER

IRSL

Record: 2

Record: 2

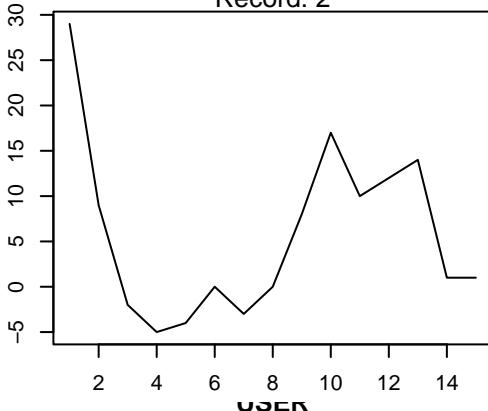
Dependent [Unknown]



Record: 2

Record: 2

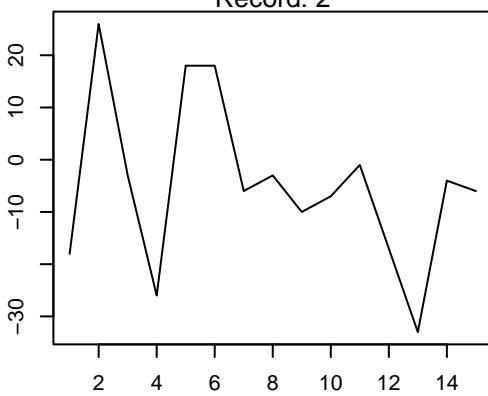
Dependent [Unknown]



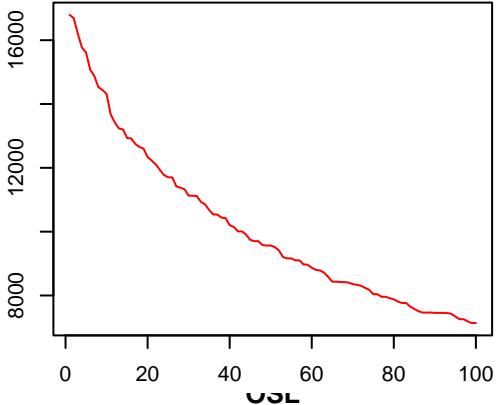
Record: 2

Record: 2

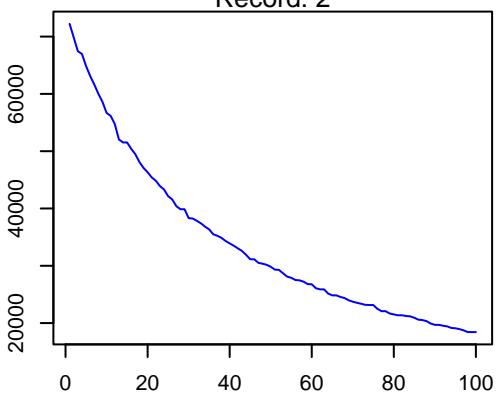
Dependent [Unknown]



IRSL [sec / s]



OSL [sec / s]



help("ExampleData.portableOSL")

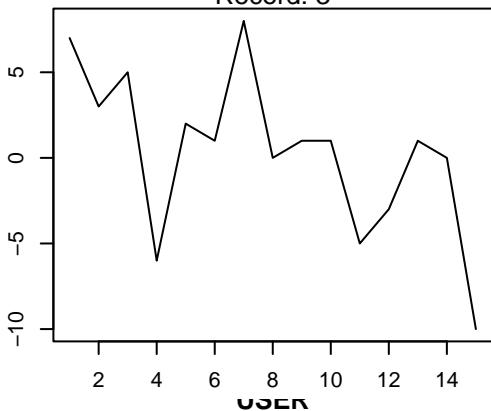
USER

IRSL

Record: 3

Record: 3

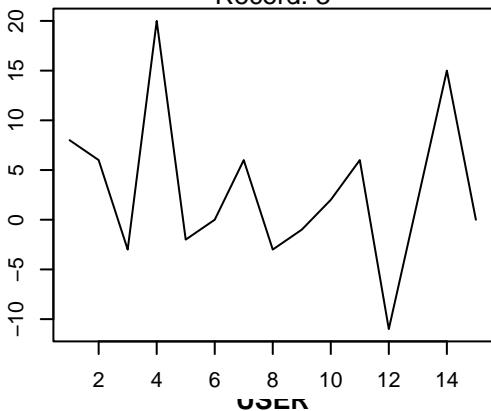
Dependent [Unknown]



Record: 3

Record: 3

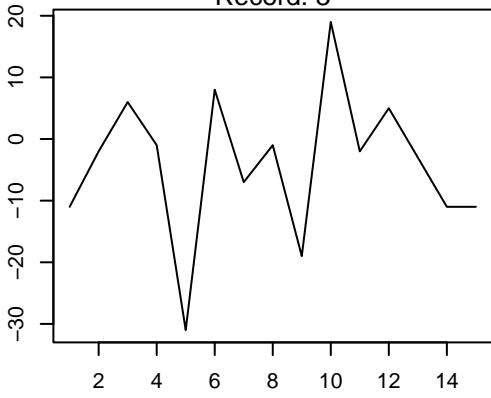
Dependent [Unknown]



Record: 3

Record: 3

Dependent [Unknown]



help("ExampleData.portableOSL")

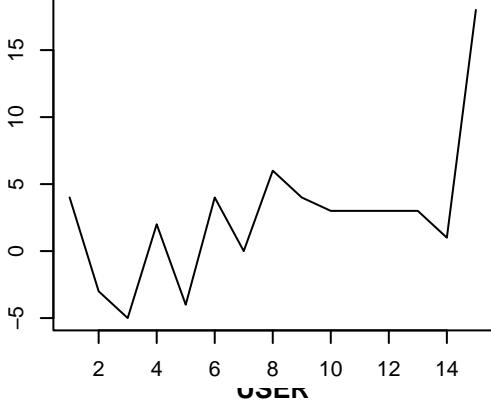
USER

IRSL

Record: 4

Record: 4

Dependent [Unknown]

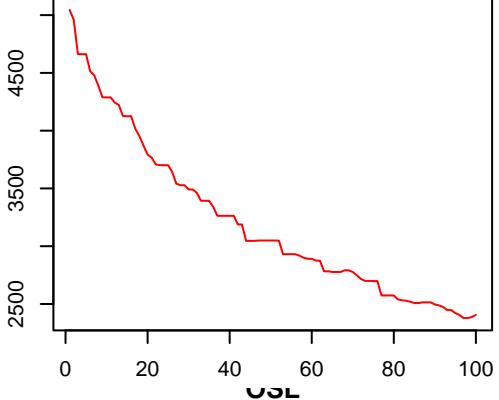


Record: 4

Record: 4

IRSL [Unknown]

IRSL [Unknown]

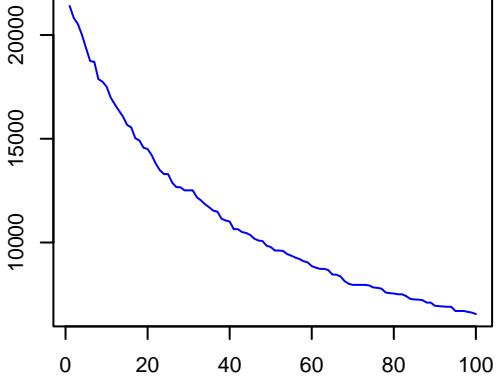


Record: 4

Record: 4

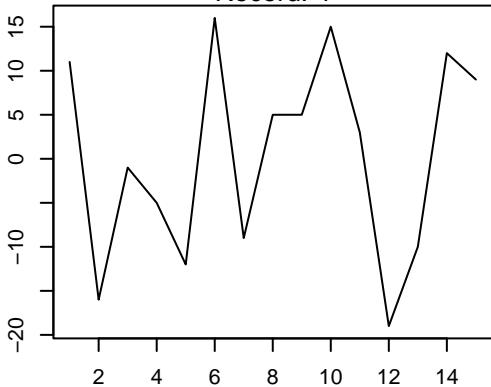
OSL [Unknown]

OSL [Unknown]



Record: 4

Dependent [Unknown]



help("ExampleData.portableOSL")

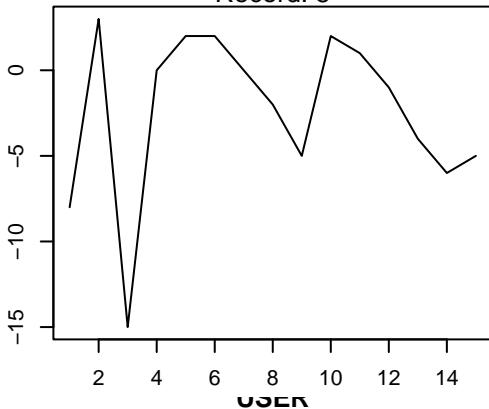
USER

IRSL

Record: 5

Record: 5

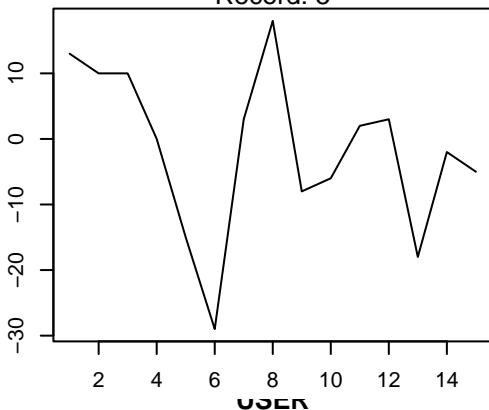
Dependent [Unknown]



Record: 5

Record: 5

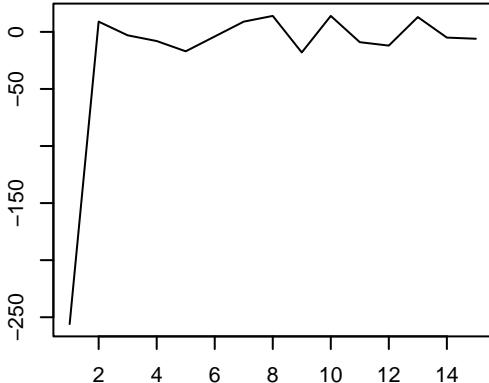
Dependent [Unknown]



Record: 5

Record: 5

Dependent [Unknown]



help("ExampleData.portableOSL")

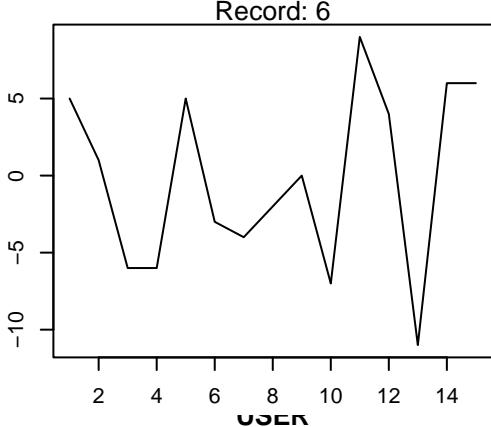
USER

IRSL

Record: 6

Record: 6

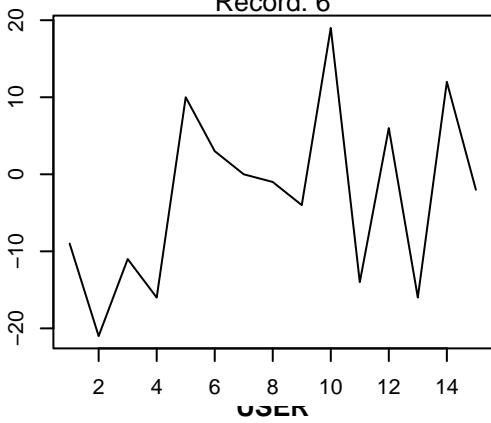
Dependent [Unknown]



Record: 6

Record: 6

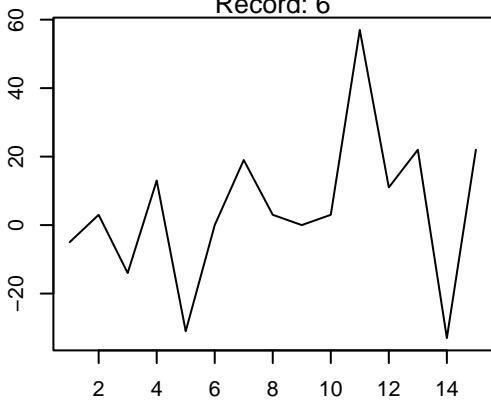
Dependent [Unknown]



Record: 6

Record: 6

Dependent [Unknown]



help("ExampleData.portableOSL")

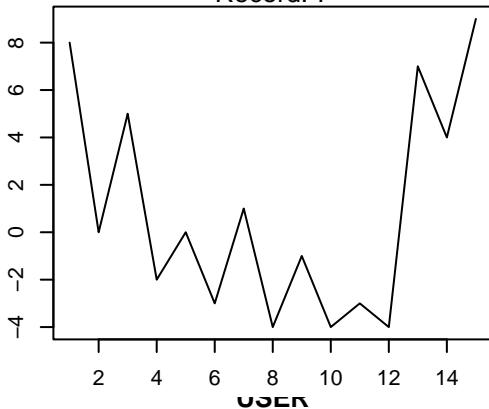
USER

IRSL

Record: 7

Record: 7

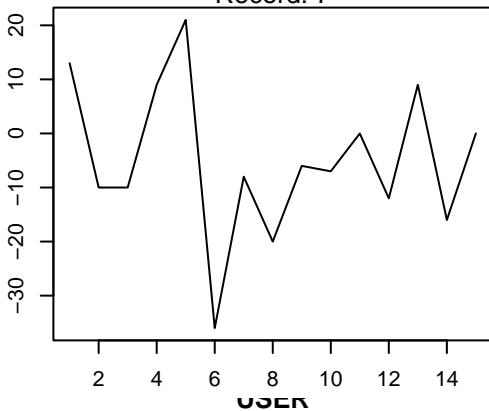
Dependent [Unknown]



Record: 7

Record: 7

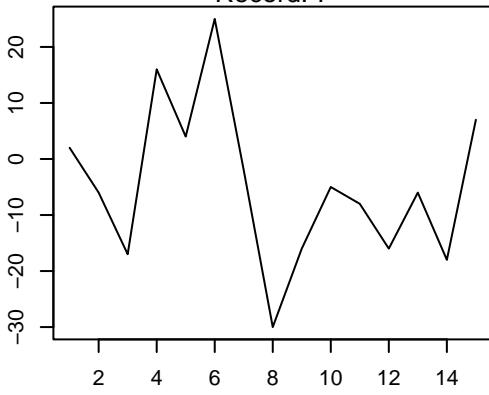
Dependent [Unknown]



Record: 7

Record: 7

Dependent [Unknown]



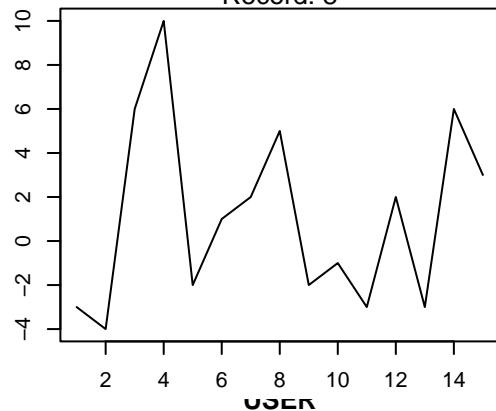
help("ExampleData.portableOSL")

USER

IRSL

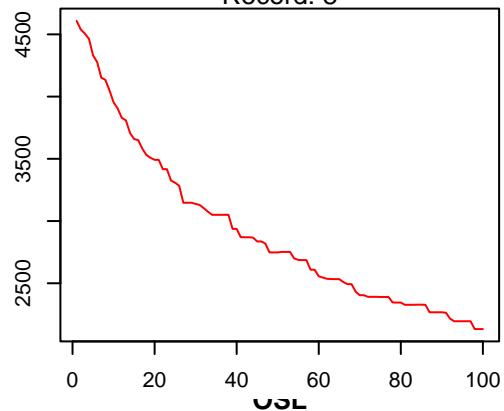
Record: 8

Dependent [Unknown]



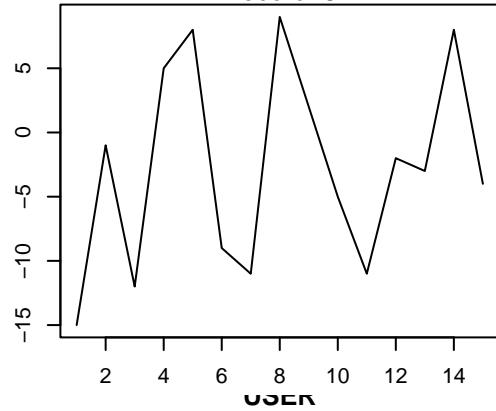
Record: 8

IRSL [sec : s]



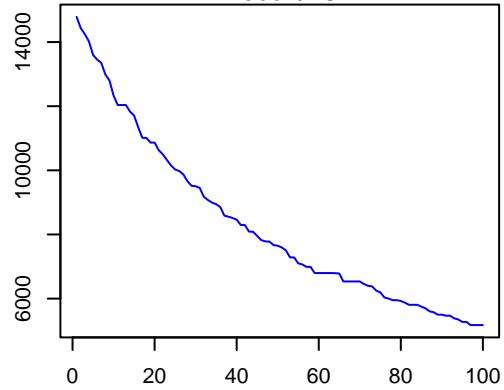
Record: 8

Dependent [Unknown]

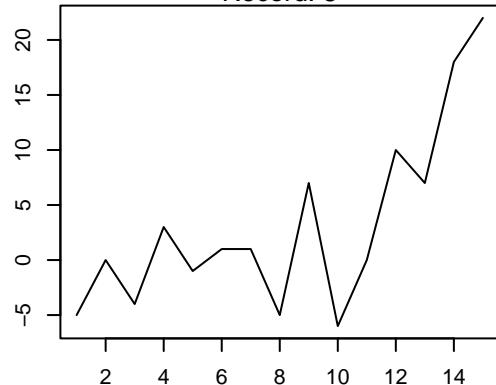


Record: 8

IRSL [sec : s]



Dependent [Unknown]



help("ExampleData.portableOSL")

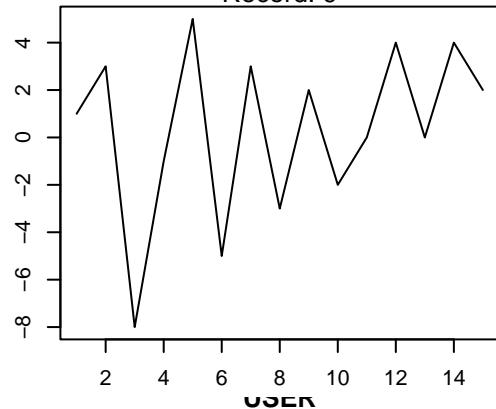
USER

IRSL

Record: 9

Record: 9

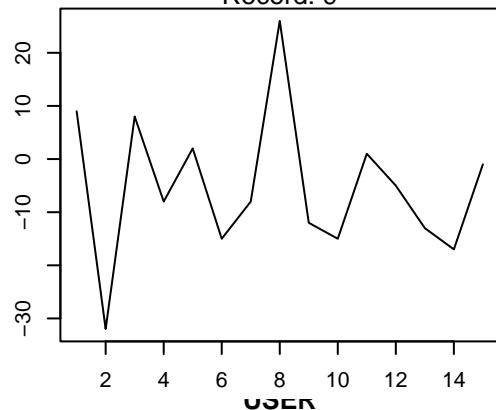
Dependent [Unknown]



Record: 9

Record: 9

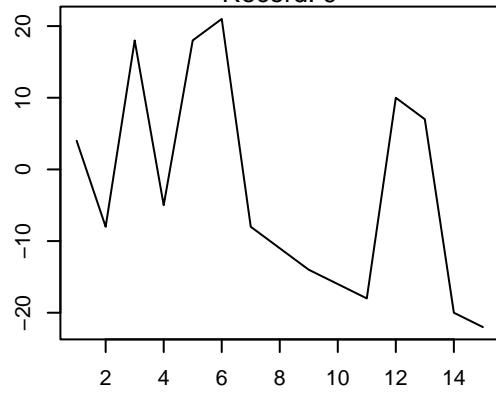
Dependent [Unknown]



Record: 9

Record: 9

Dependent [Unknown]

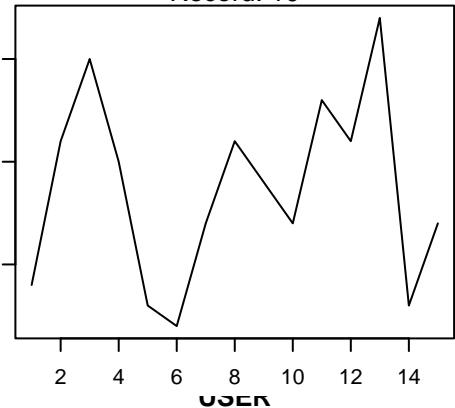


help("ExampleData.portableOSL")

USER

Dependent [Unknown]

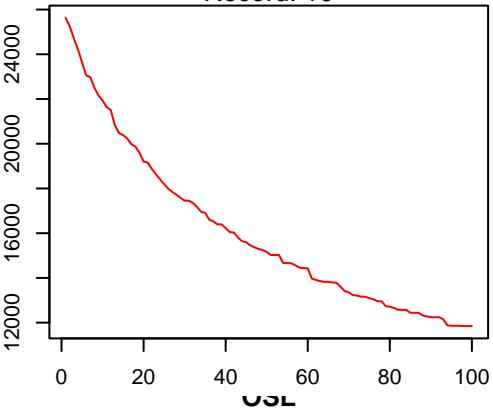
Record: 10



IRSL

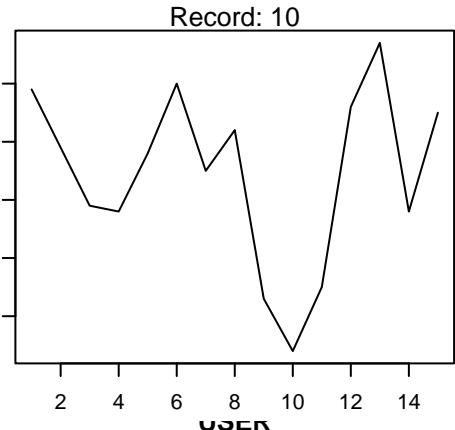
IRSL [s⁻¹]

Record: 10



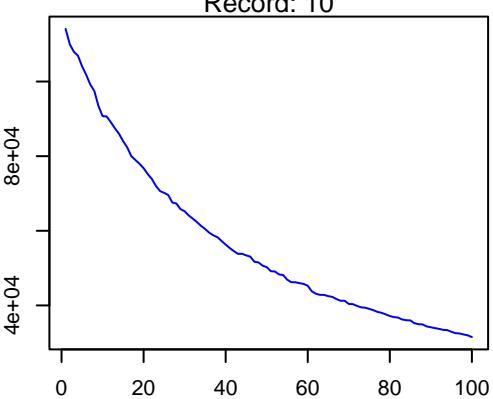
Record: 10

Dependent [Unknown]



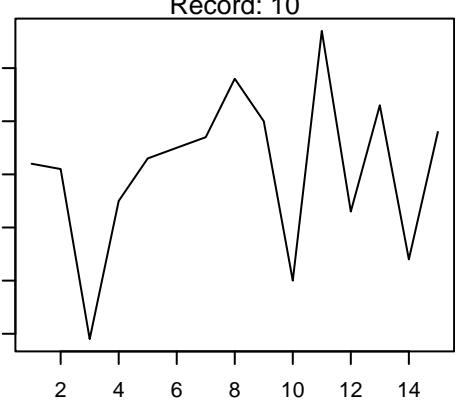
Record: 10

OSL [s⁻¹]



Record: 10

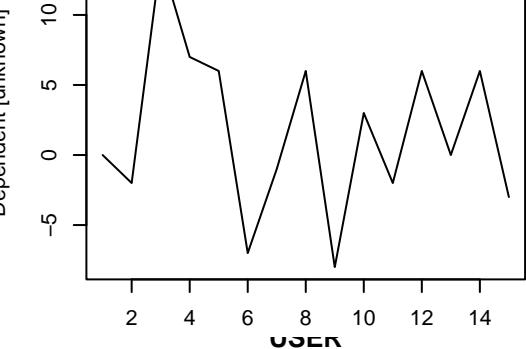
Dependent [Unknown]



help("ExampleData.portableOSL")

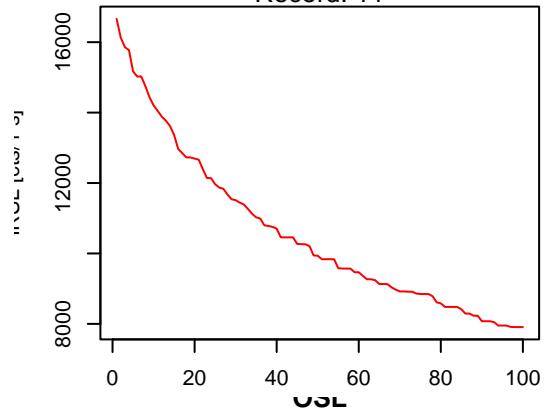
USER

Record: 11



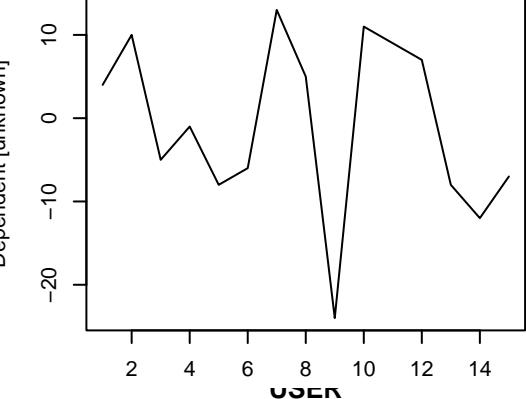
IRSL

Record: 11

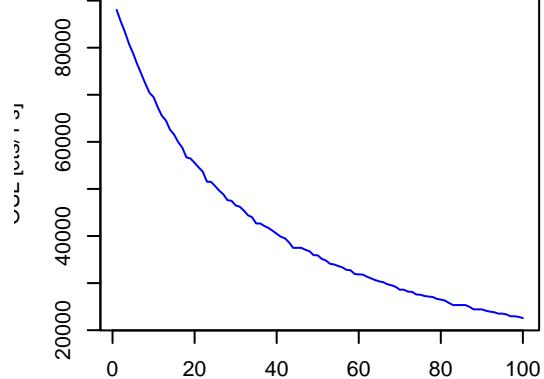


help("ExampleData.portableOSL")

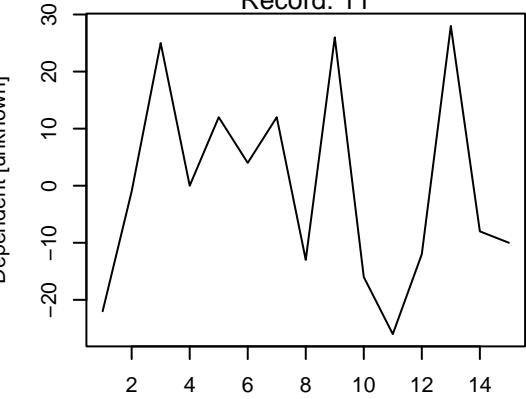
Record: 11



Record: 11



Record: 11

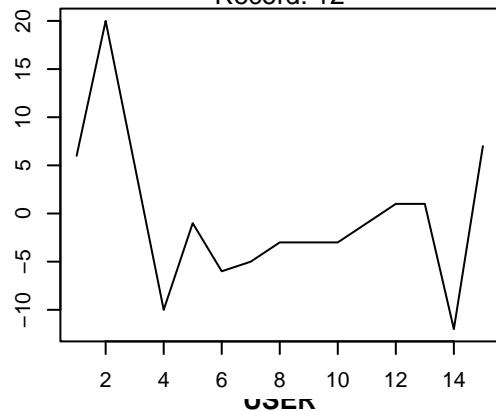


USER

IRSL

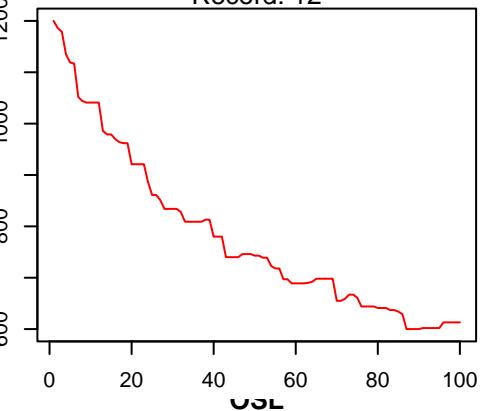
Record: 12

Dependent [Unknown]



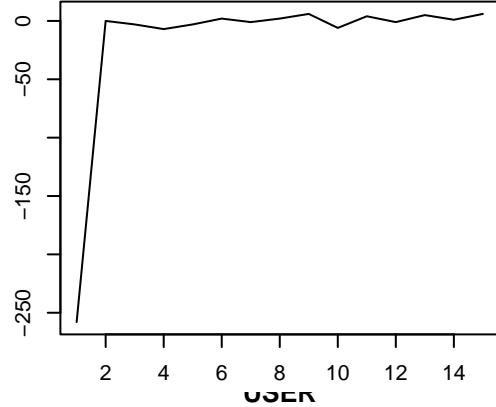
Record: 12

IRSL [sec]



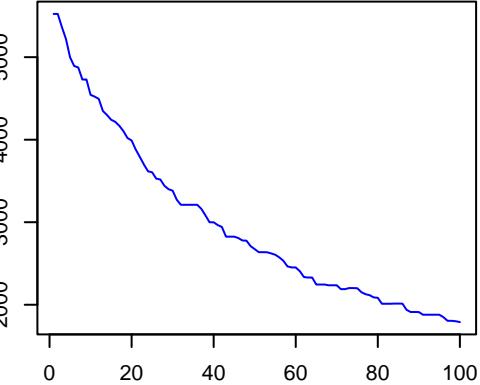
Record: 12

Dependent [Unknown]



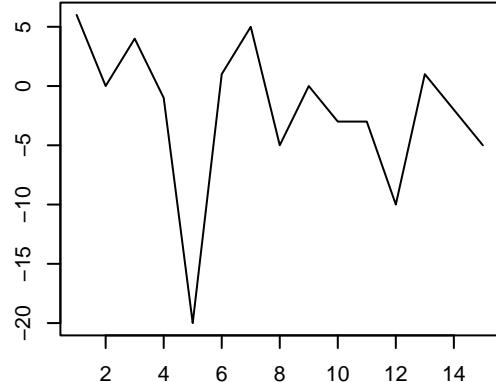
Record: 12

OSL [sec]



Record: 12

Dependent [Unknown]



help("ExampleData.portableOSL")

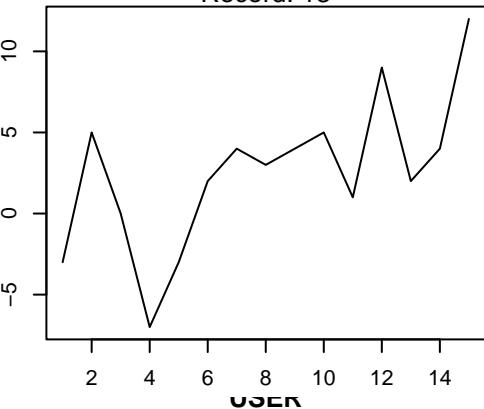
USER

IRSL

Record: 13

Record: 13

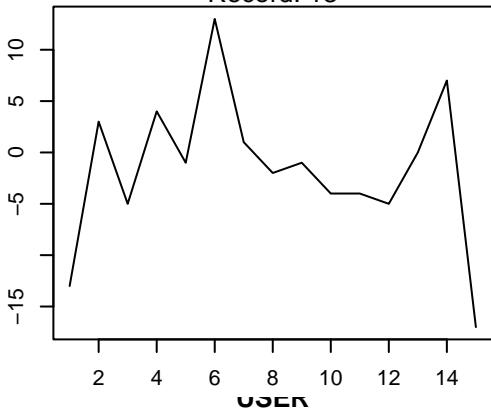
Dependent [Unknown]



Record: 13

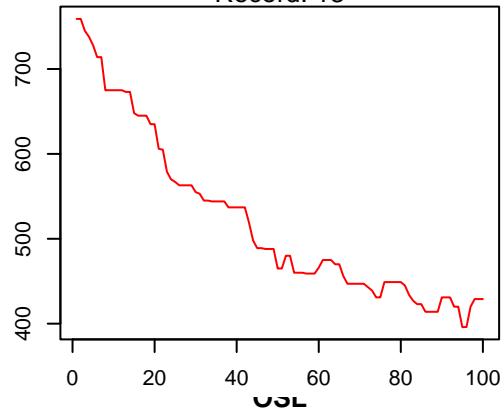
Record: 13

Dependent [Unknown]

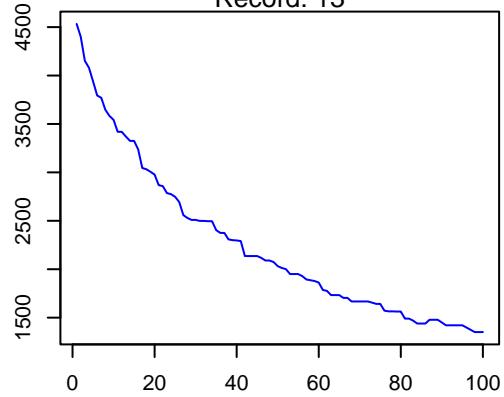


Record: 13

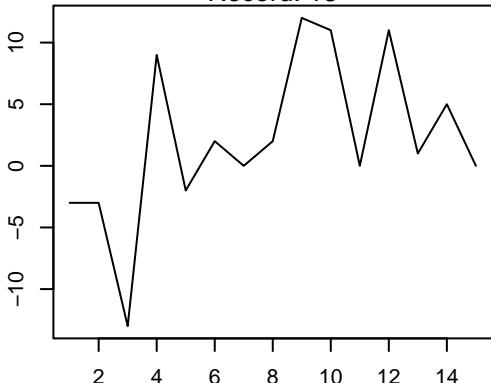
IRSL [sec / s]



IRSL [sec / s]



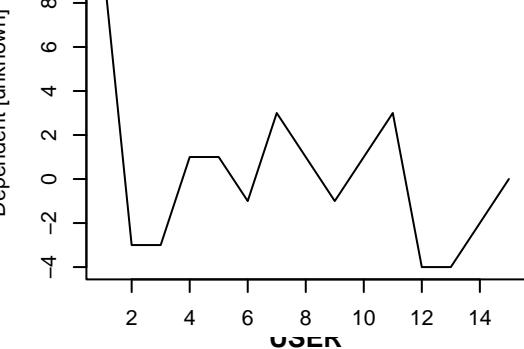
Dependent [Unknown]



help("ExampleData.portableOSL")

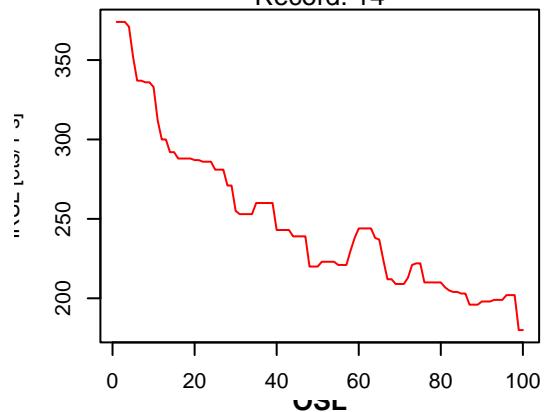
USER

Record: 14

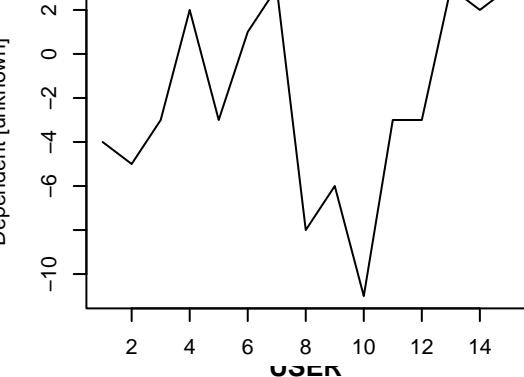


IRSL

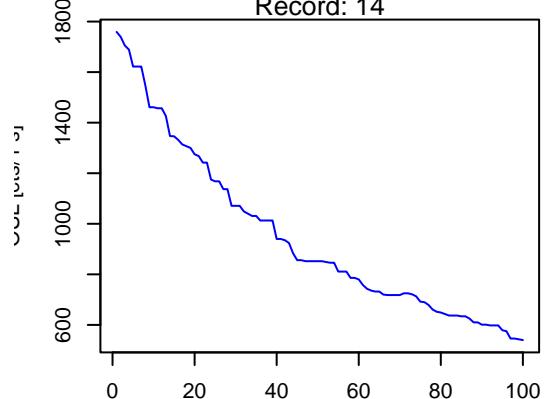
Record: 14



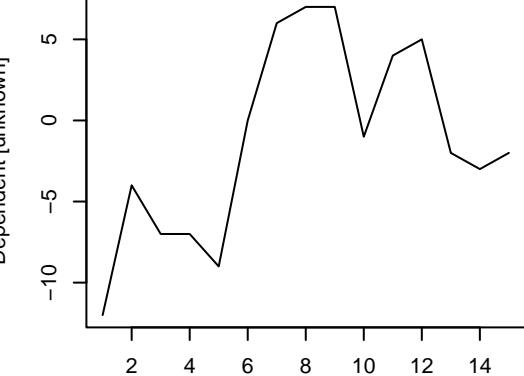
Record: 14



Record: 14



Record: 14



help("ExampleData.portableOSL")

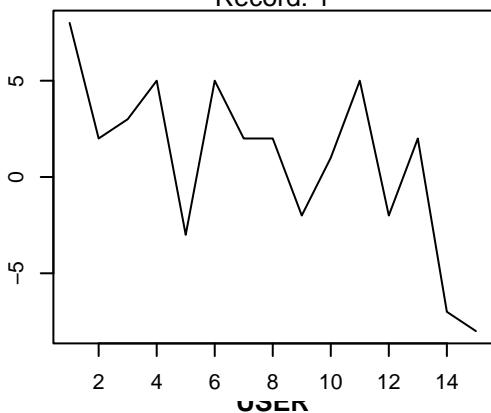
USER

IRSL

Record: 1

Record: 1

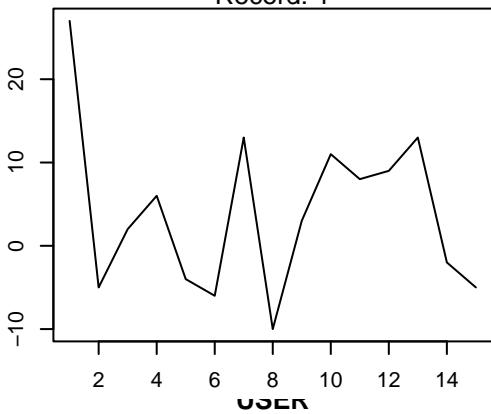
Dependent [Unknown]



Record: 1

Record: 1

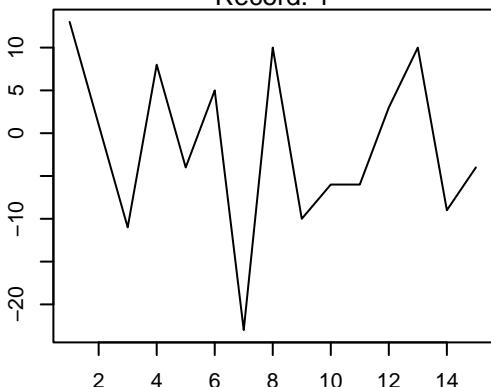
Dependent [Unknown]



Record: 1

Record: 1

Dependent [Unknown]



IRSL [Counts]

8000
6000
4000

0 20 40 60 80 100

Record: 1

IRSL [Counts]

30000
20000
10000

0

20 40 60 80 100

help("PSL2Risoe.BINfileData")

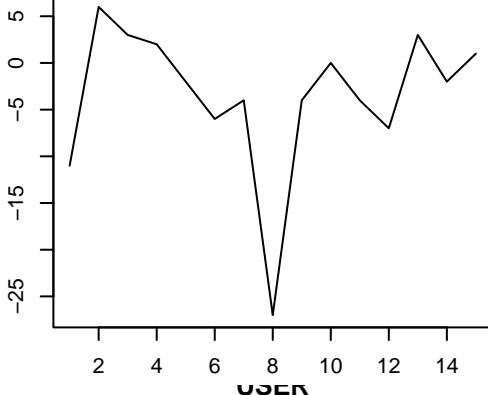
USER

IRSL

Record: 2

Record: 2

Dependent [Unknown]

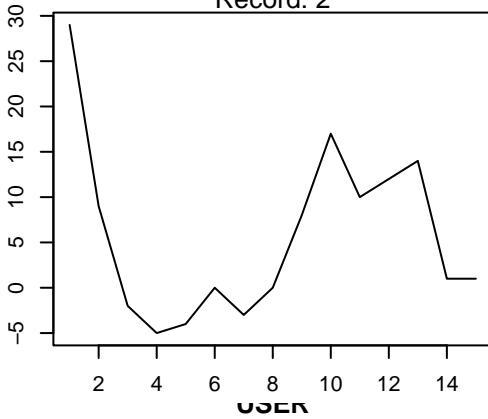


2 4 6 8 10 12 14

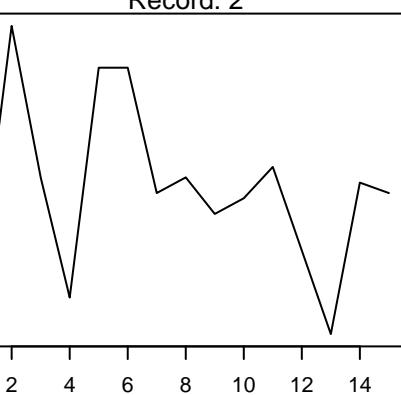
Record: 2

Record: 2

Dependent [Unknown]

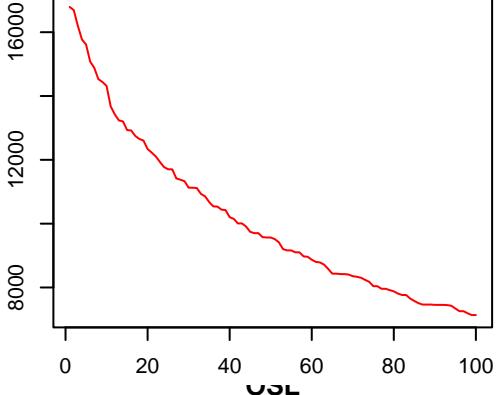


2 4 6 8 10 12 14



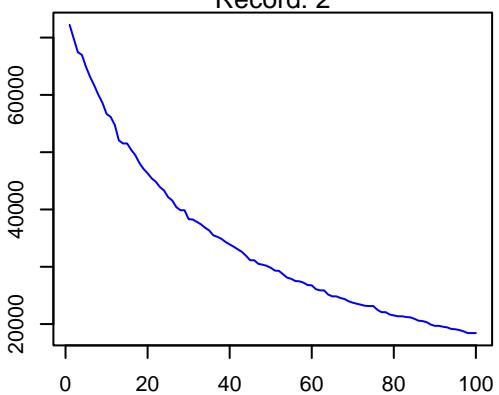
2 4 6 8 10 12 14

IRSL [counts]



0 20 40 60 80 100

IRSL [counts]



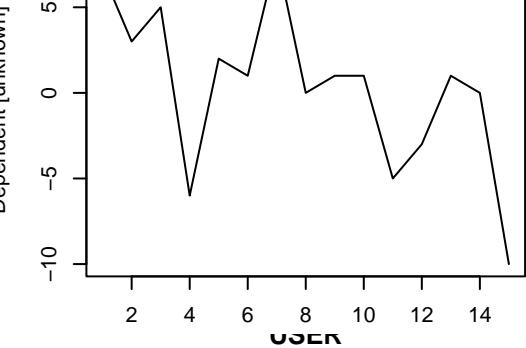
0 20 40 60 80 100

help("PSL2Riso.BINfileData")

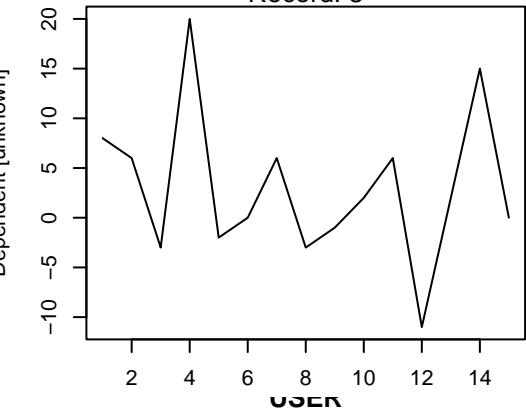
USER

IRSL

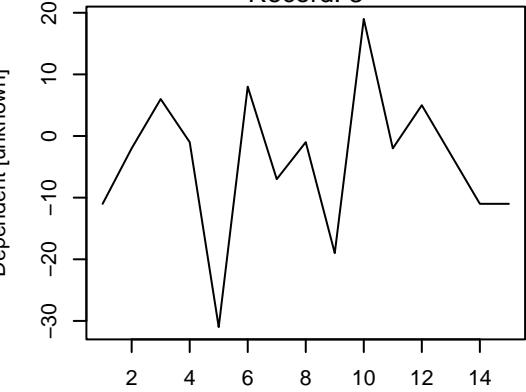
Record: 3



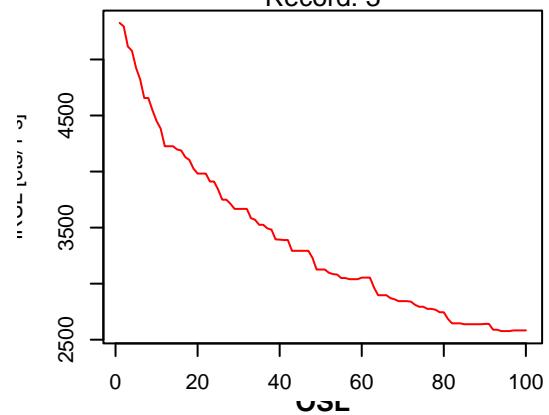
Record: 3



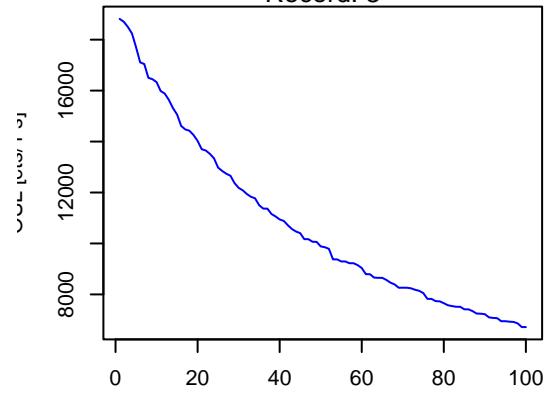
Record: 3



Record: 3



Record: 3



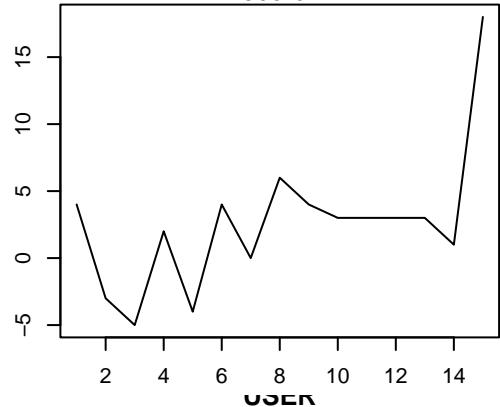
help("PSL2Risoe.BINfileData")

USER

IRSL

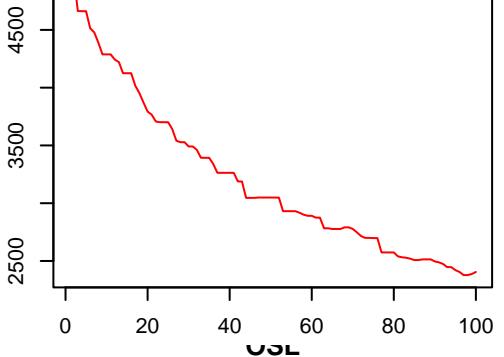
Record: 4

Dependent [Unknown]



Record: 4

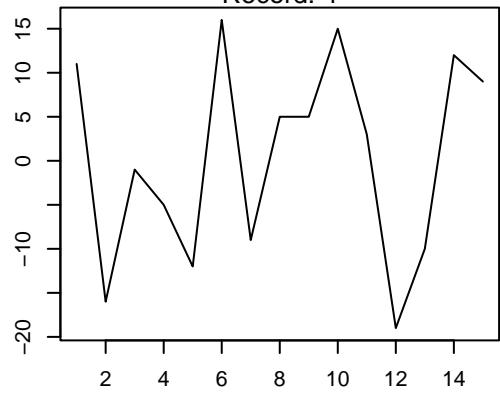
IRSL [s]



help("PSL2Risoe.BINfileData")

Record: 4

Dependent [Unknown]



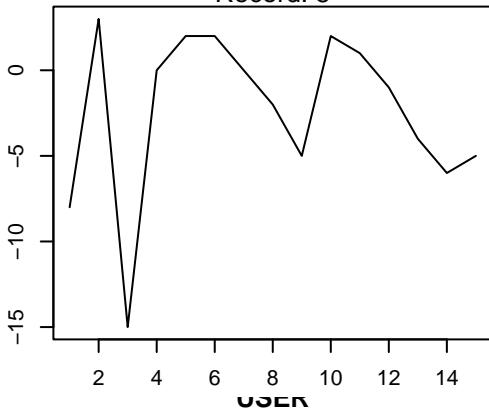
USER

IRSL

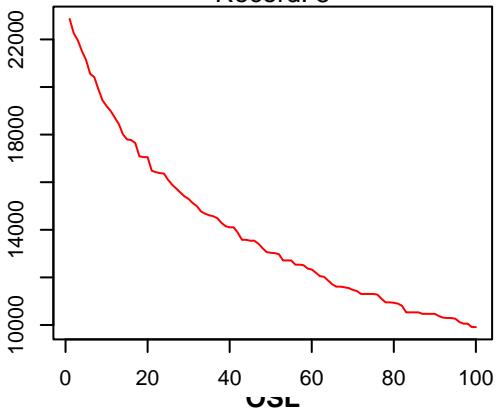
Record: 5

Record: 5

Dependent [Unknown]



IRSL [s⁻¹]

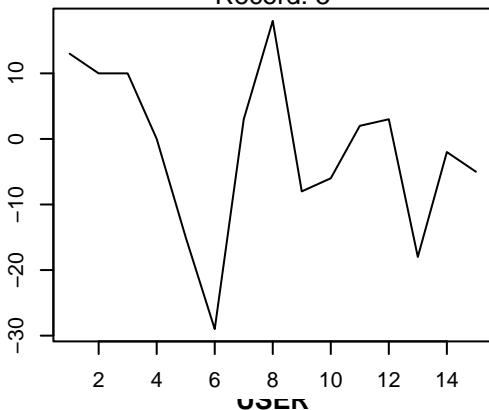


help("PSL2Riso.BINfileData")

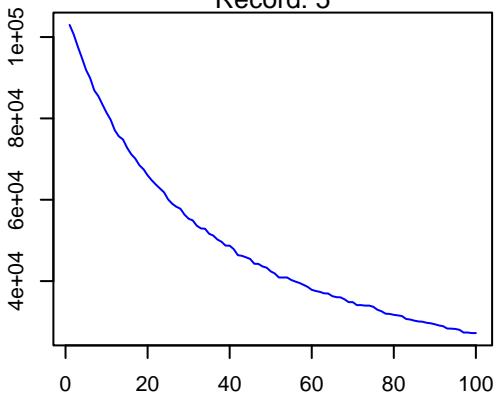
Record: 5

Record: 5

Dependent [Unknown]

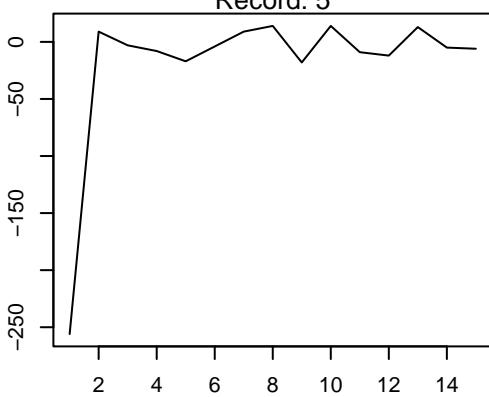


IRSL [s⁻¹]



Record: 5

Dependent [Unknown]



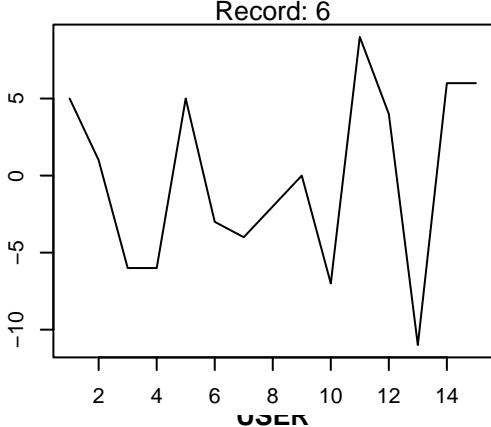
USER

IRSL

Record: 6

Record: 6

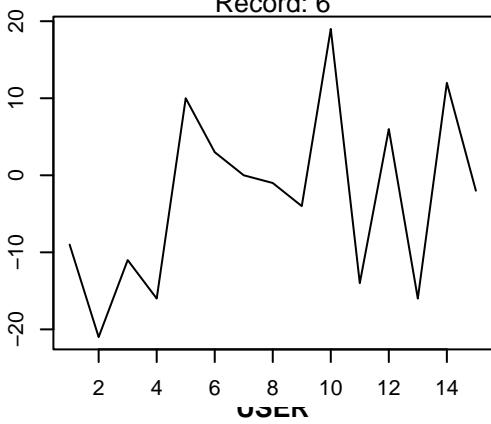
Dependent [Unknown]



Record: 6

Record: 6

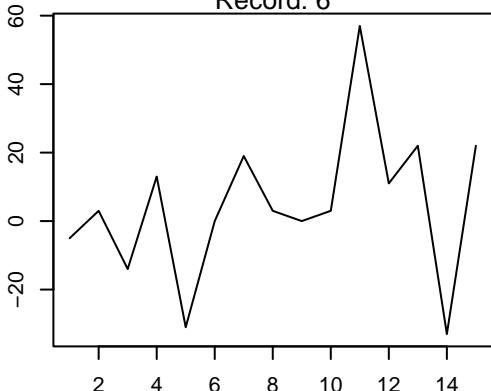
Dependent [Unknown]



Record: 6

Record: 6

Dependent [Unknown]



IRSL [e.s.u.]

IRSL [e.s.u.]

IRSL [e.s.u.]

IRSL

IRSL

IRSL

IRSL

IRSL

IRSL

IRSL

IRSL [e.s.u.]

IRSL [e.s.u.]

IRSL [e.s.u.]

IRSL

IRSL

IRSL

IRSL

IRSL

IRSL

IRSL

help("PSL2Risoe.BINfileData")

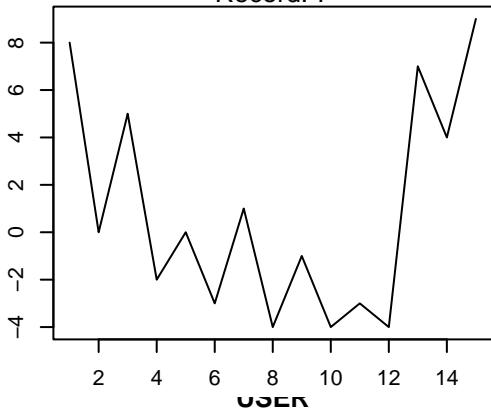
USER

IRSL

Record: 7

Record: 7

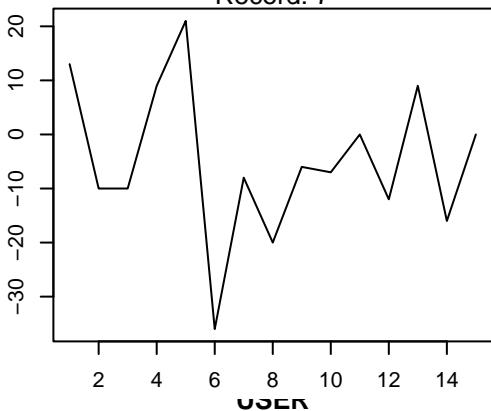
Dependent [Unknown]



Record: 7

Record: 7

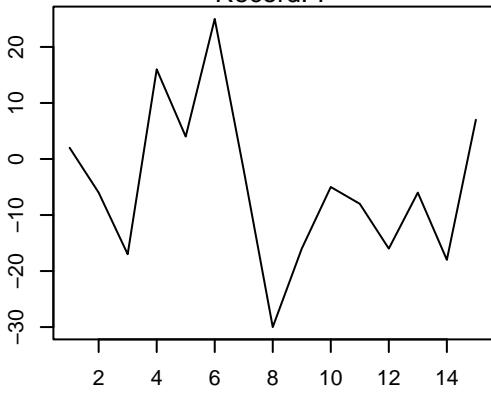
Dependent [Unknown]



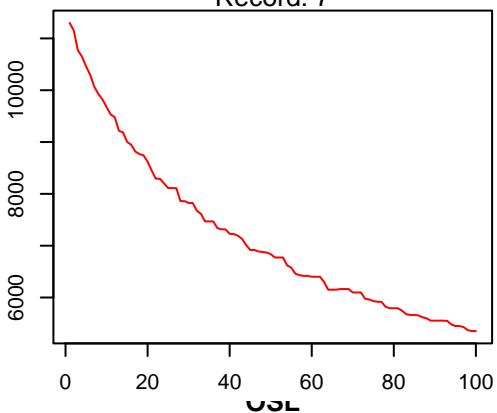
Record: 7

Record: 7

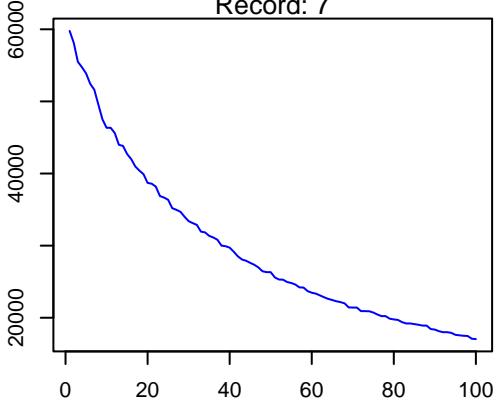
Dependent [Unknown]



IRSL [Esr / s]



IRSL [Esr / s]



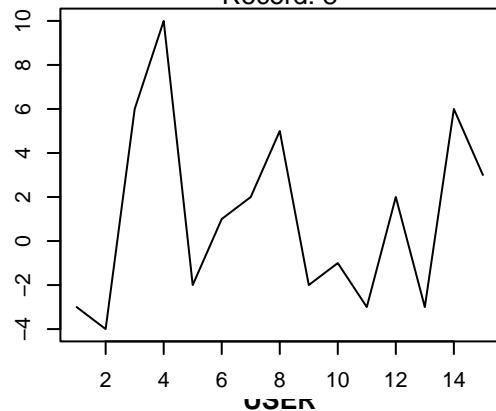
help("PSL2Risoe.BINfileData")

USER

IRSL

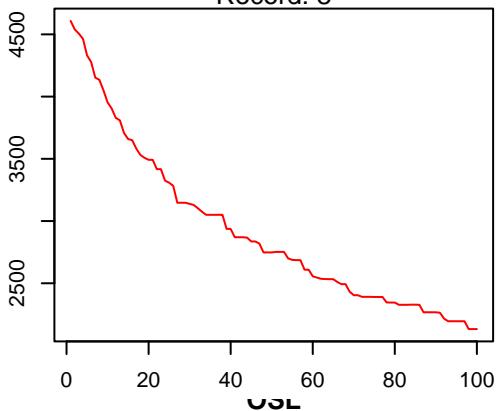
Record: 8

Dependent [Unknown]



Record: 8

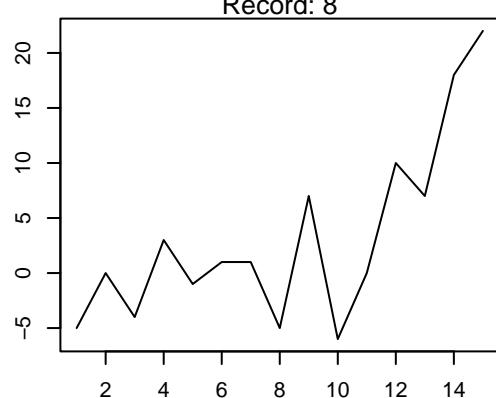
IRSL [sec : s]



help("PSL2Riso.BINfileData")

Record: 8

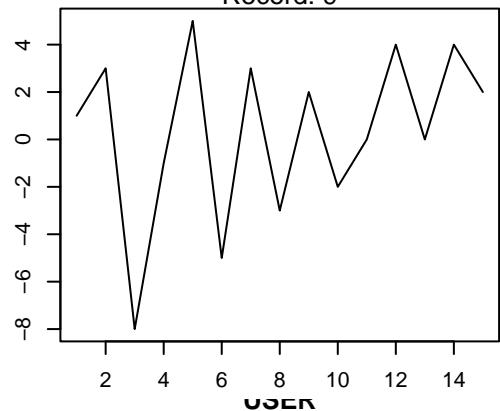
Dependent [Unknown]



USER

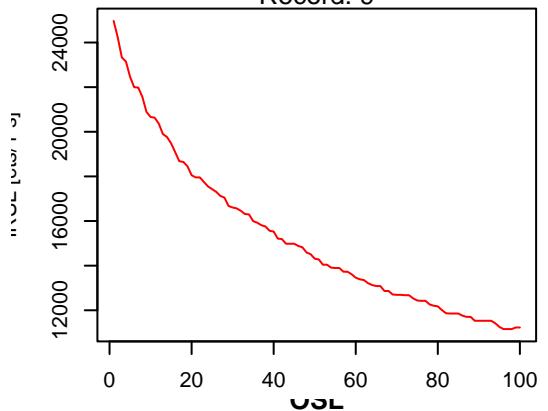
Record: 9

Dependent [Unknown]



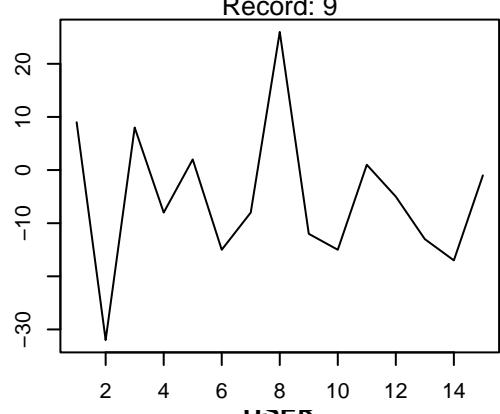
IRSL

Record: 9

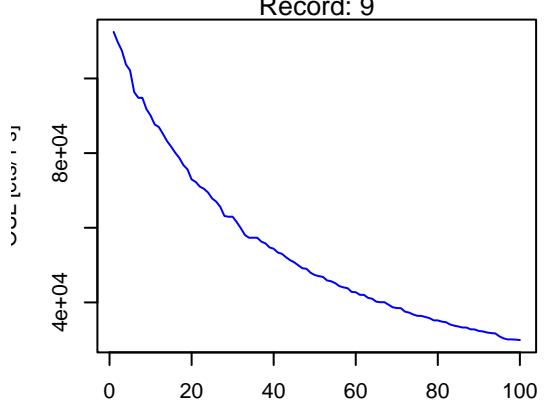


help("PSL2Risoe.BINfileData")

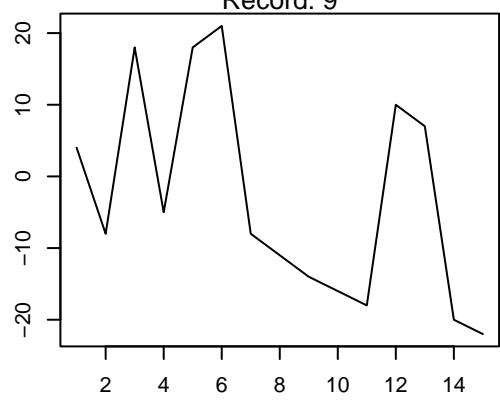
Dependent [Unknown]



Record: 9



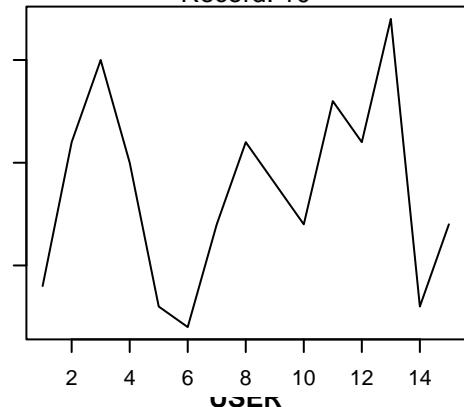
Dependent [Unknown]



USER

Dependent [Unknown]

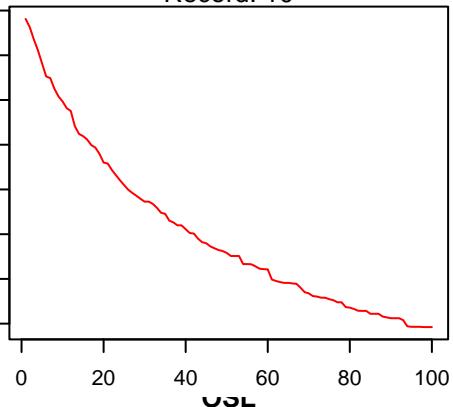
Record: 10



IRSL

Record: 10

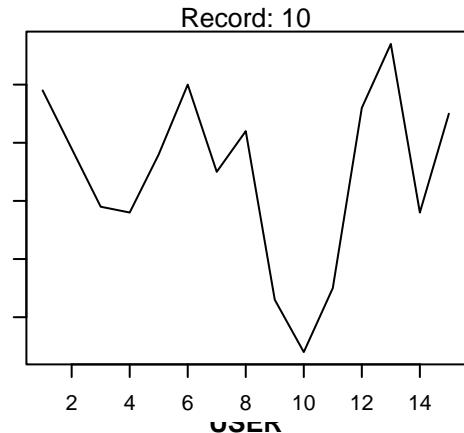
IRSL [esr / s]



help("PSL2Risoe.BINfileData")

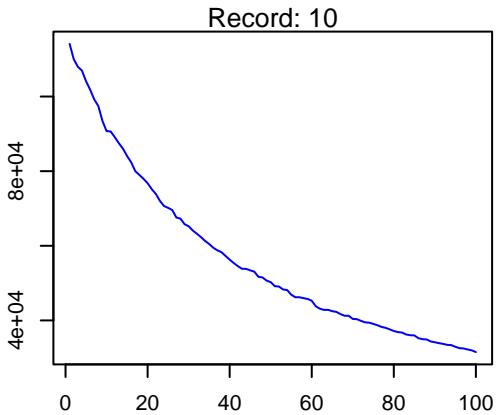
Record: 10

Dependent [Unknown]



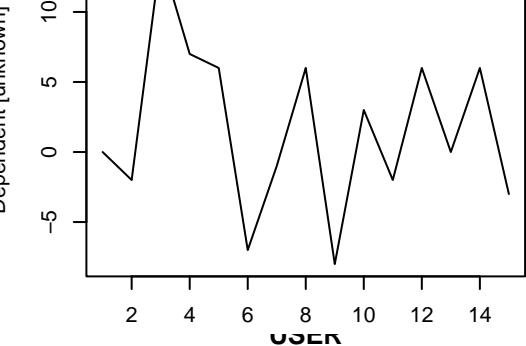
Record: 10

IRSL [esr / s]



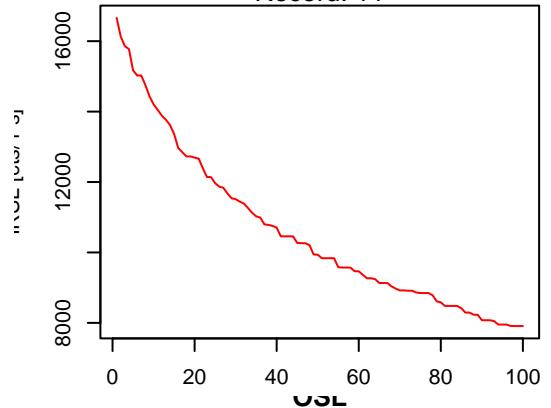
USER

Record: 11



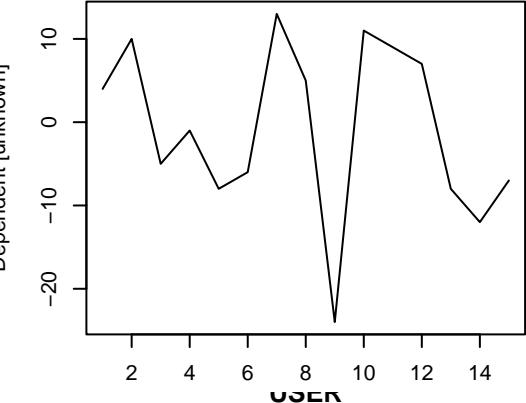
IRSL

Record: 11

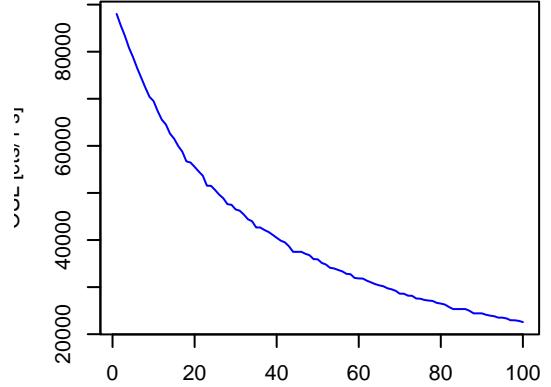


help("PSL2Risoe.BINfileData")

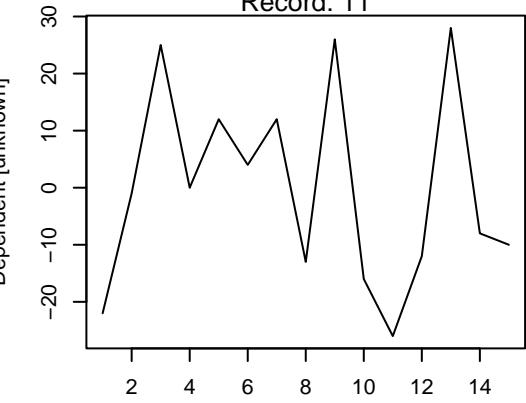
Record: 11



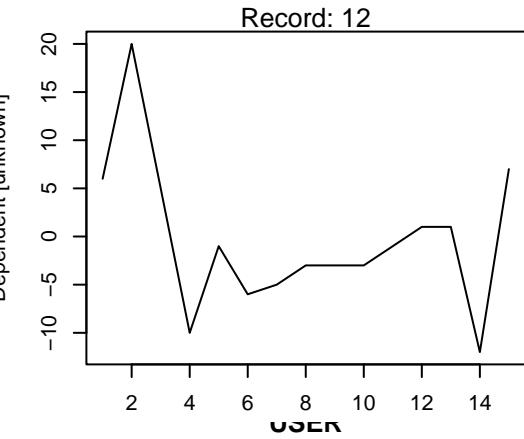
Record: 11



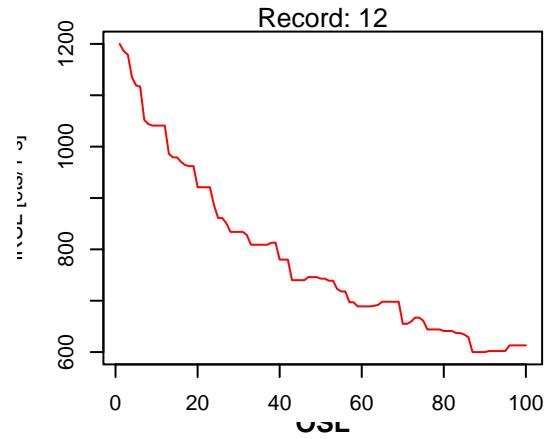
Record: 11



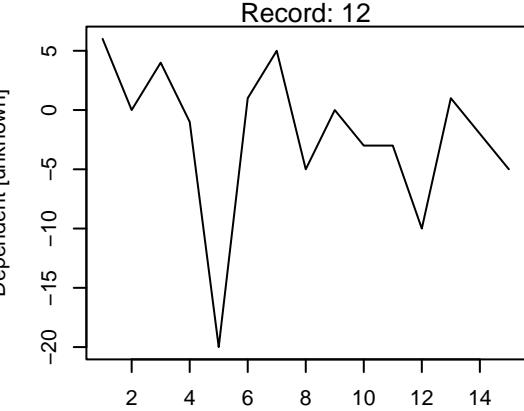
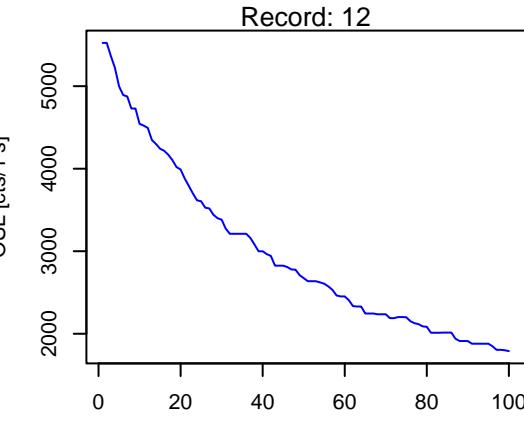
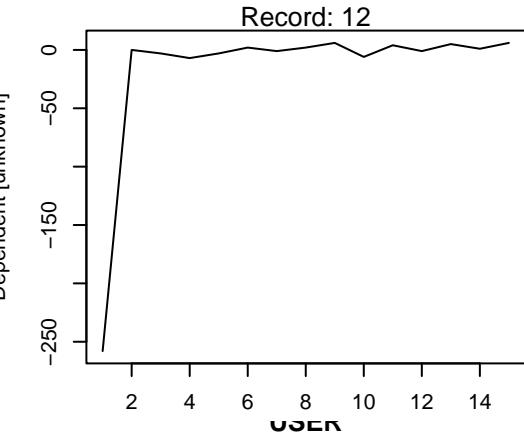
USER



IRSL



help("PSL2Riso.BINfileData")



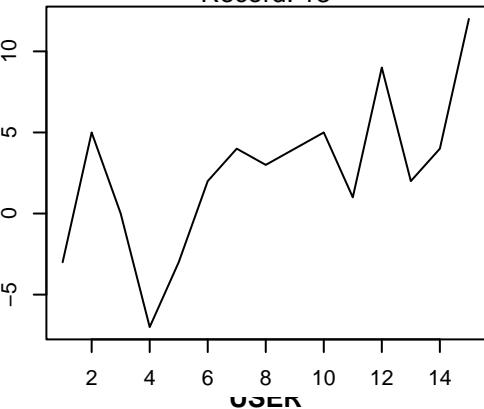
USER

IRSL

Record: 13

Record: 13

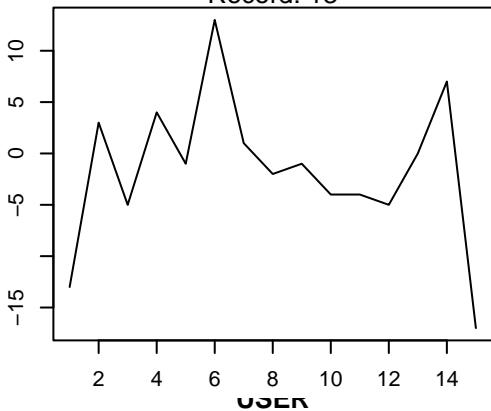
Dependent [Unknown]



Record: 13

Record: 13

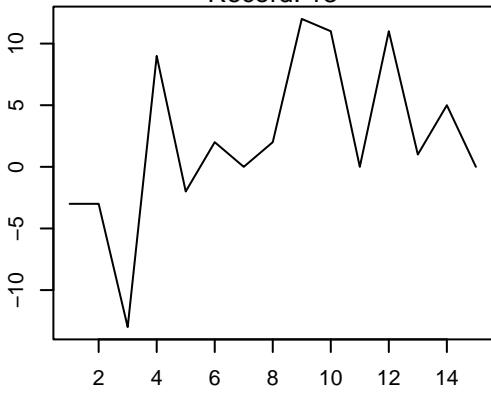
Dependent [Unknown]



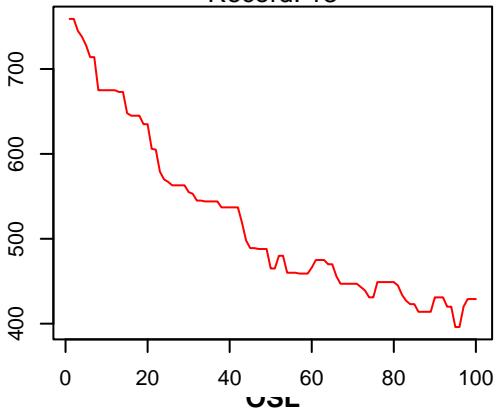
Record: 13

Record: 13

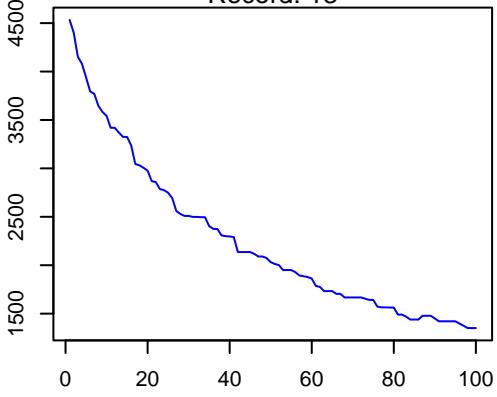
Dependent [Unknown]



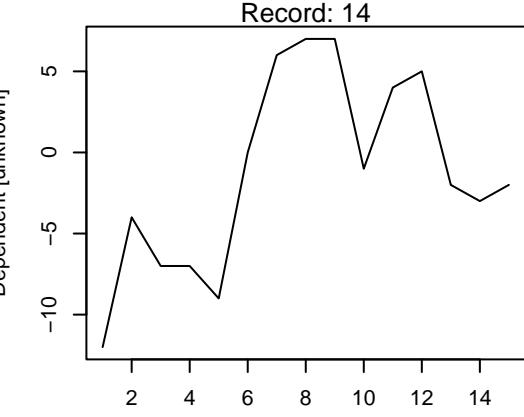
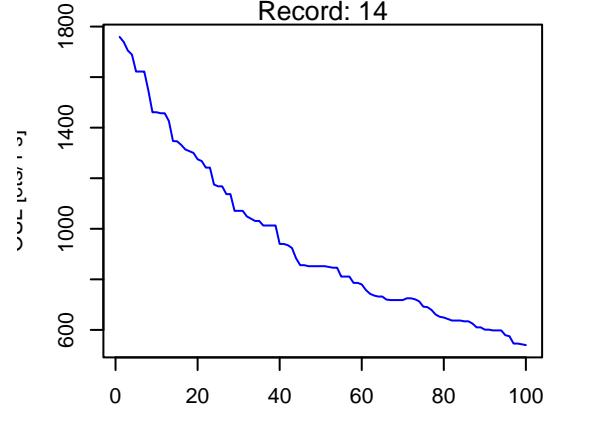
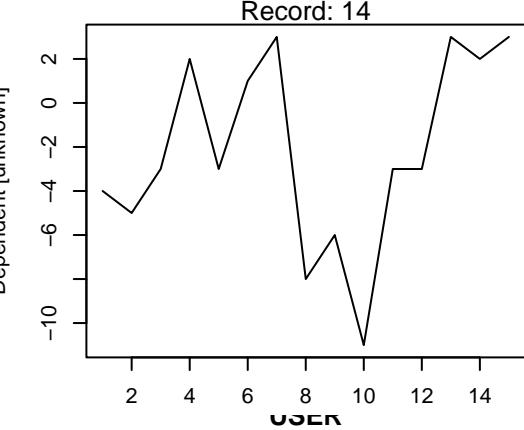
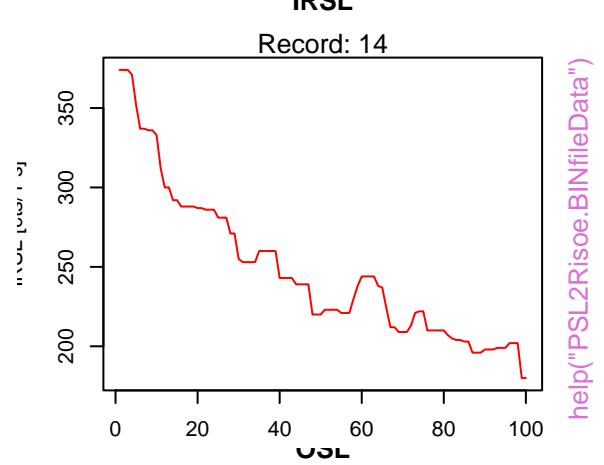
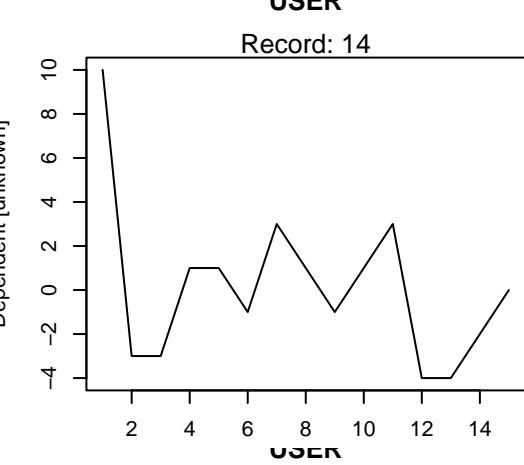
IRSL [sec]



IRSL [sec]

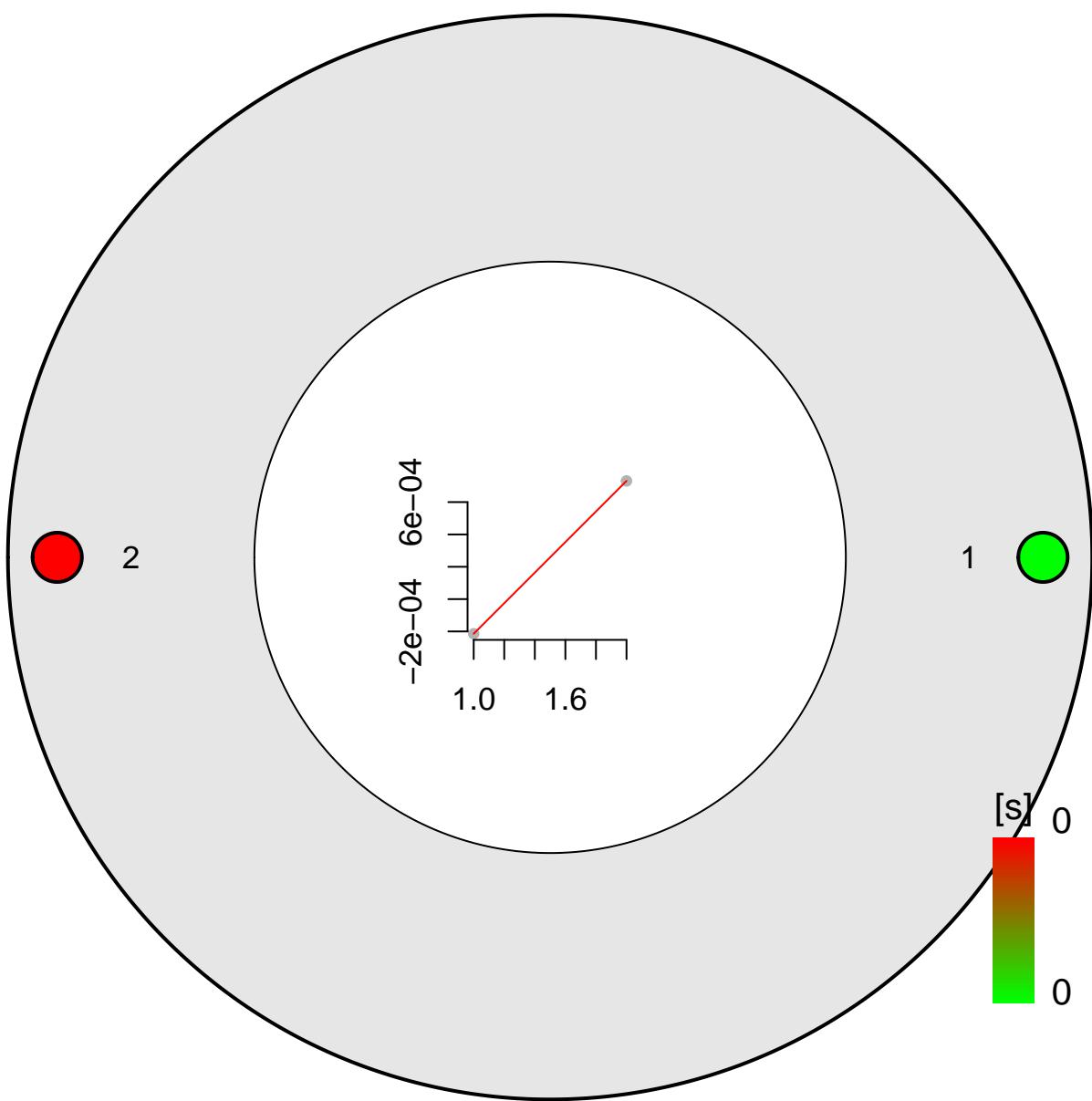


help("PSL2Risoe.BINfileData")

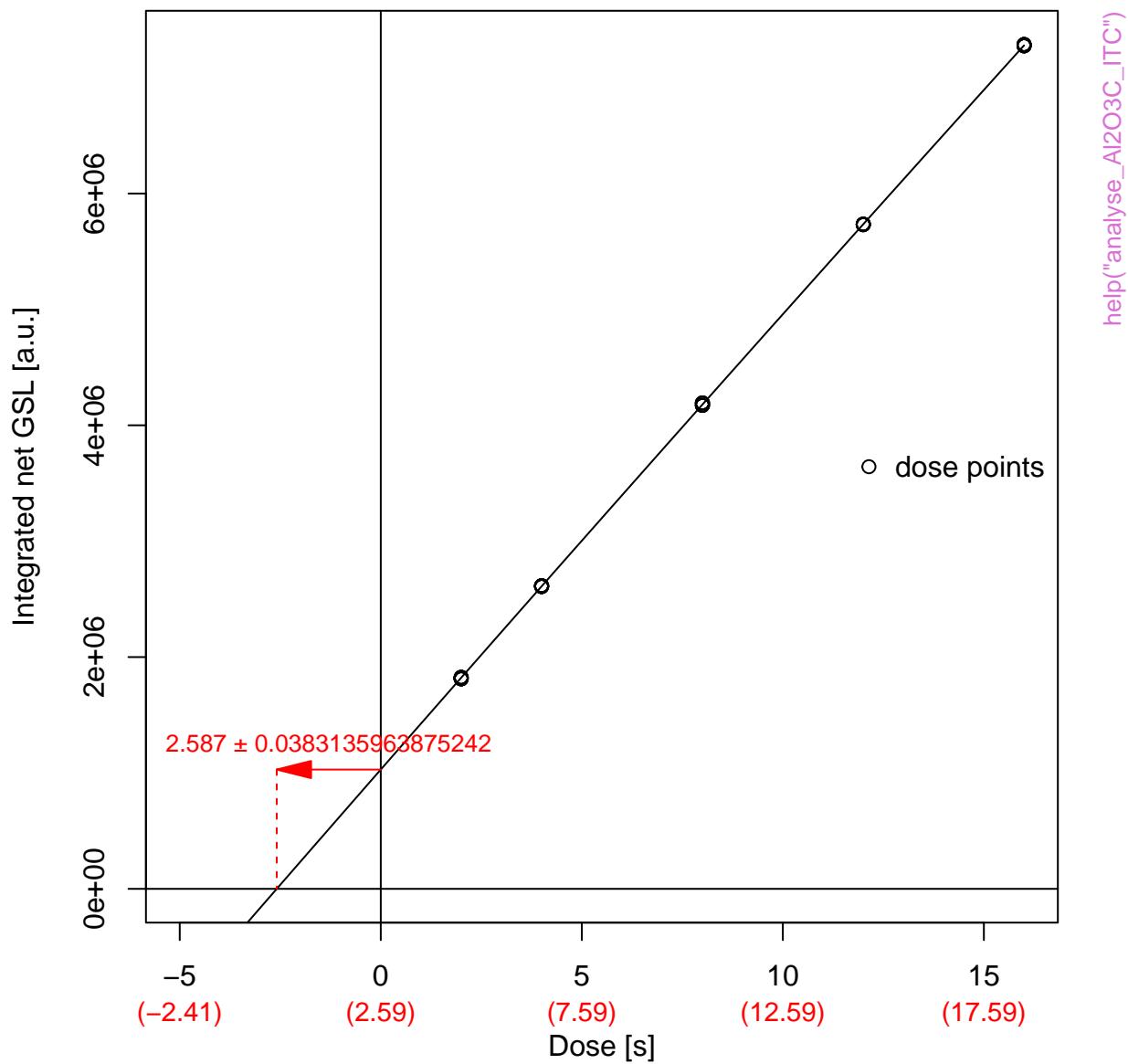


help("PSL2Risoe.BINfileData")

Sample Carousel Crosstalk

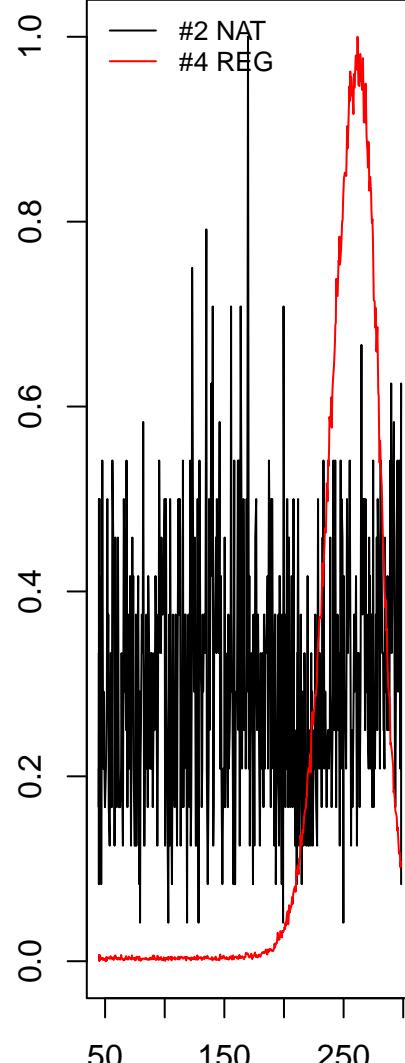


Irradiation Time Correction



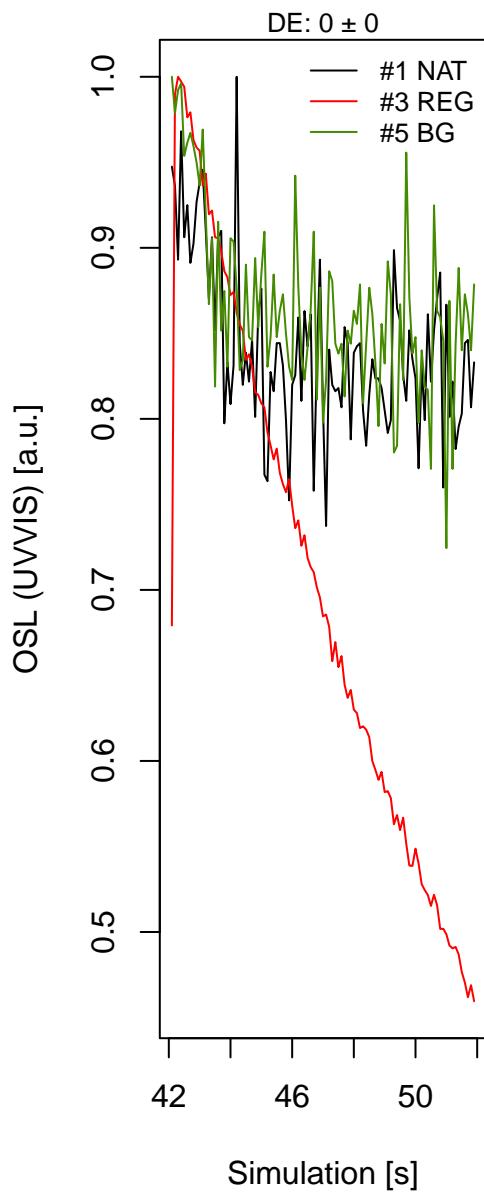
#1

ALQ POS: 1 | TL



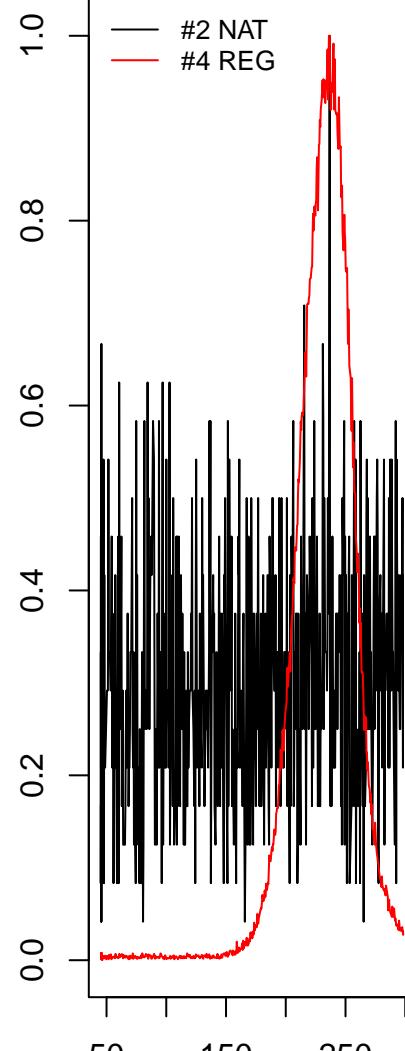
```
help("analyse_Al2O3C_Measurement")
```

ALQ POS: 1 | OSL



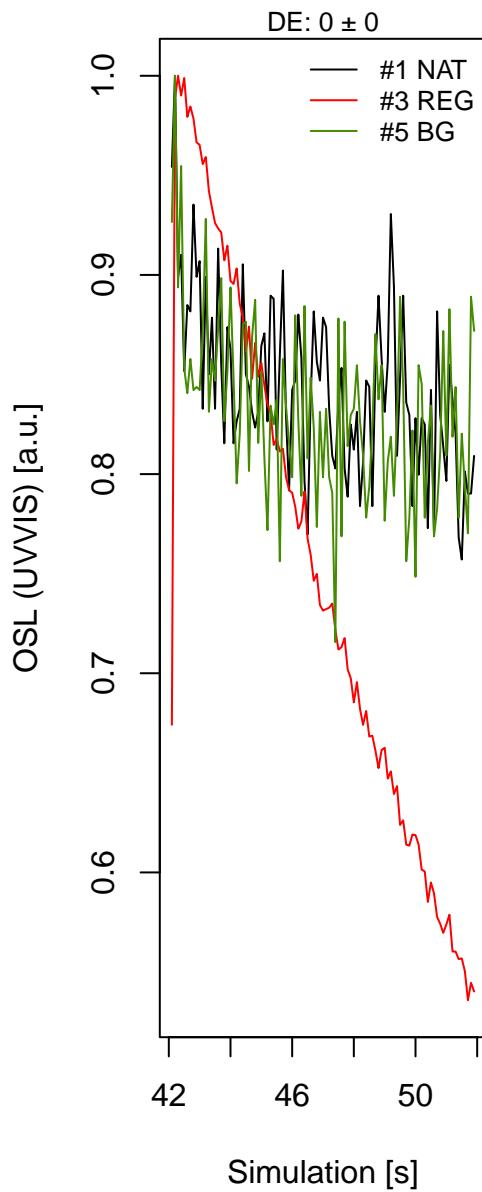
#2

ALQ POS: 2 | TL



```
help("analyse_Al2O3C_Measurement")
```

ALQ POS: 2 | OSL

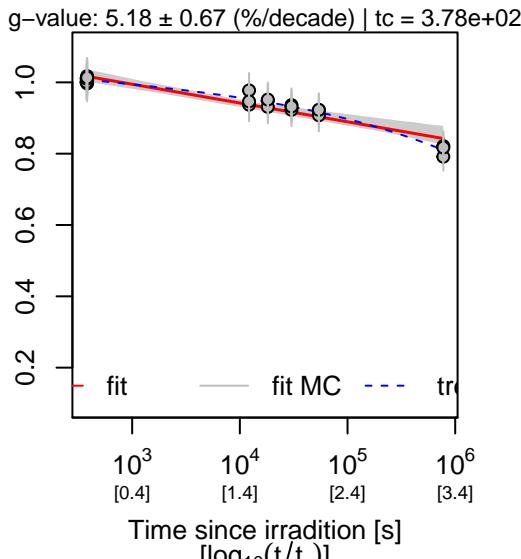


help("analyse_FadingMeasurement")

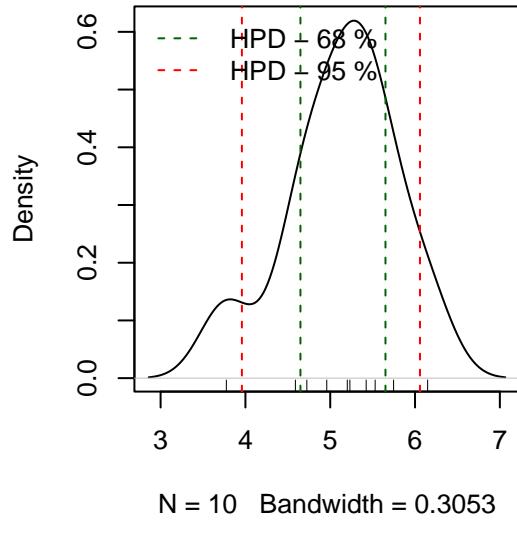
No L_x curves detected

No T_x curves detected

Signal Fading

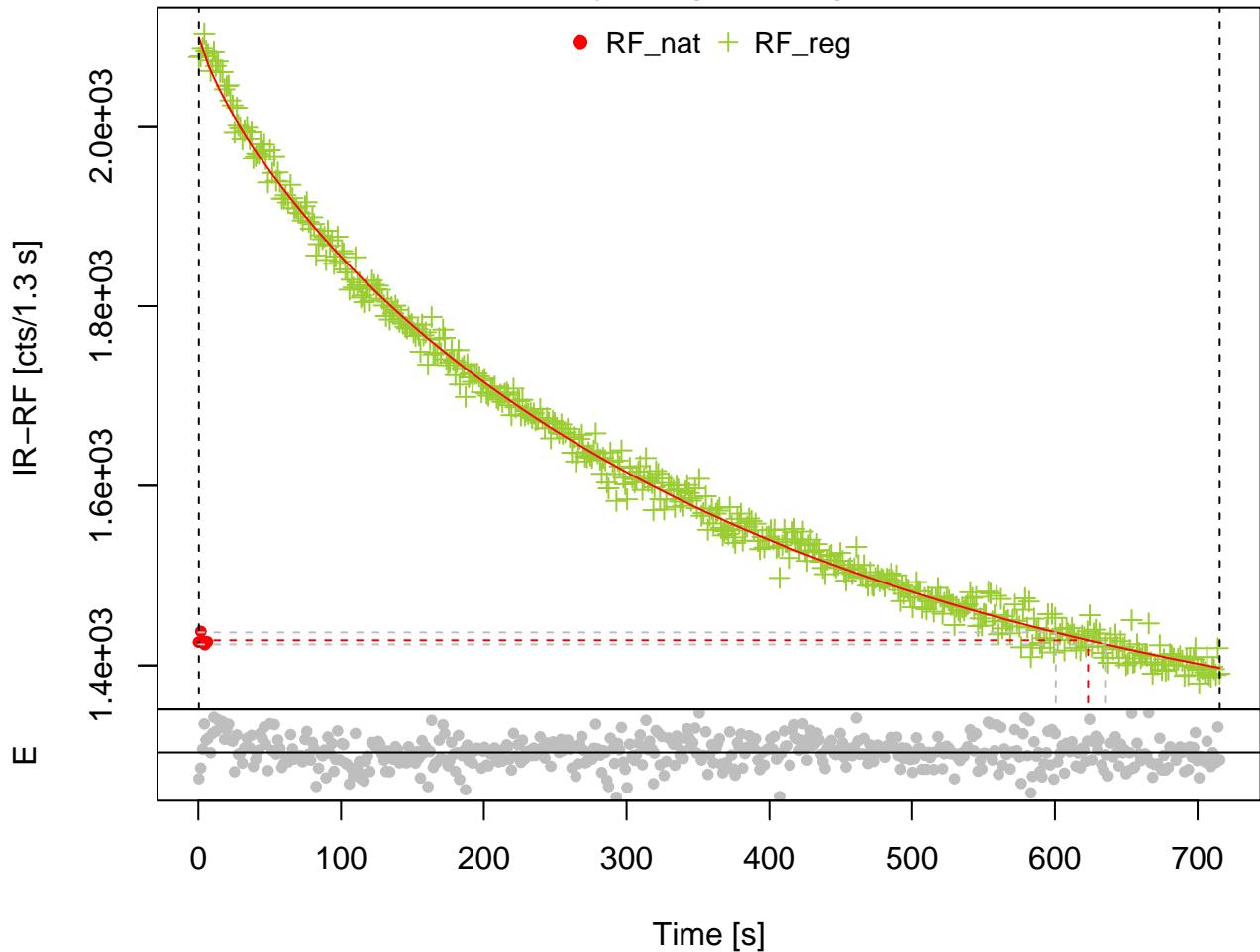


Density: g-values (%/decade)



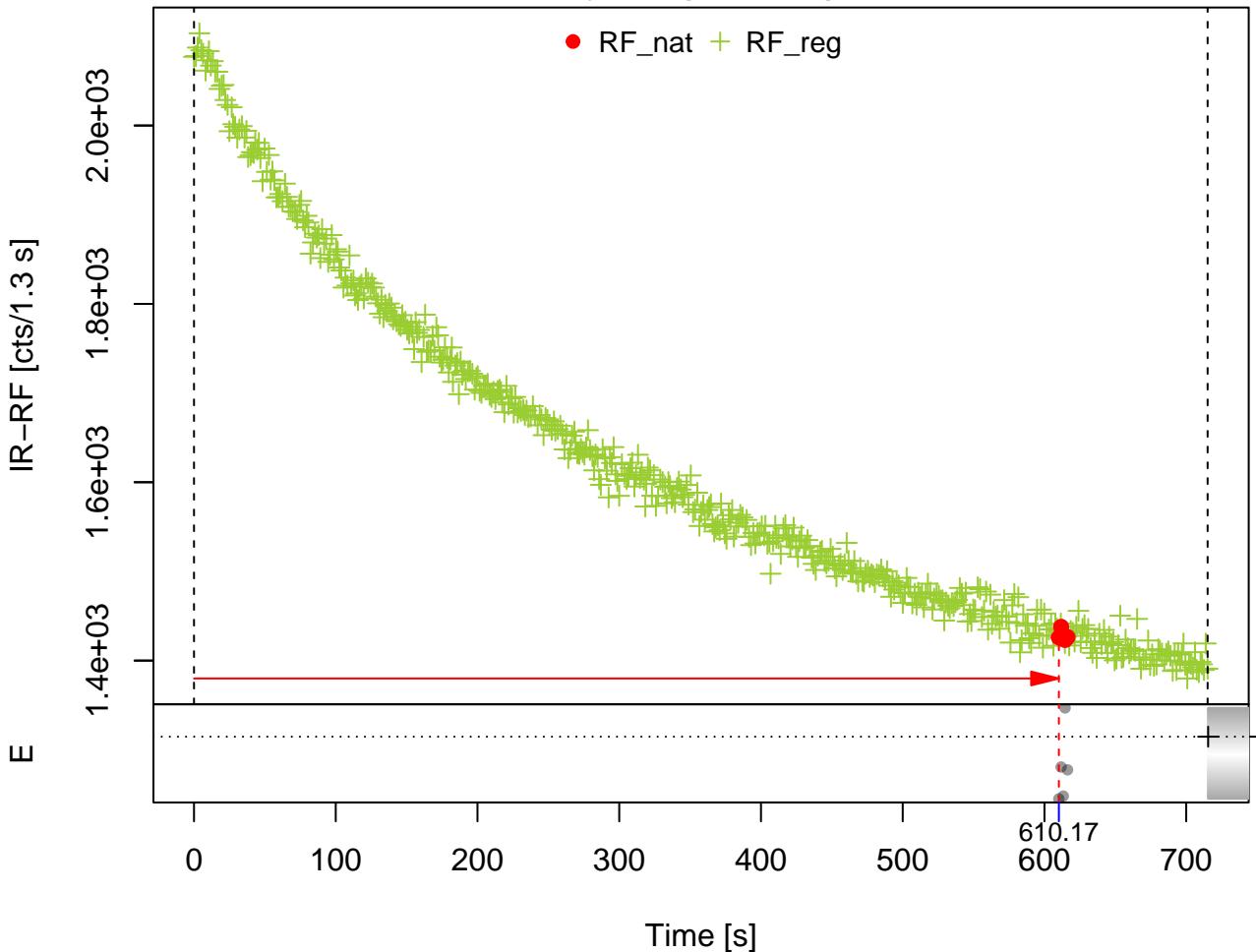
IR-RF

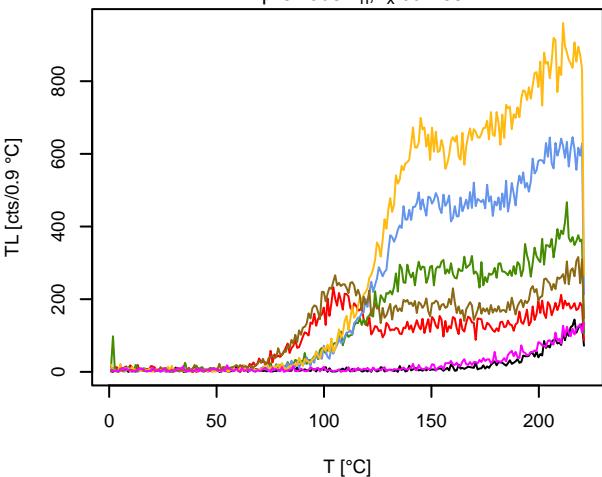
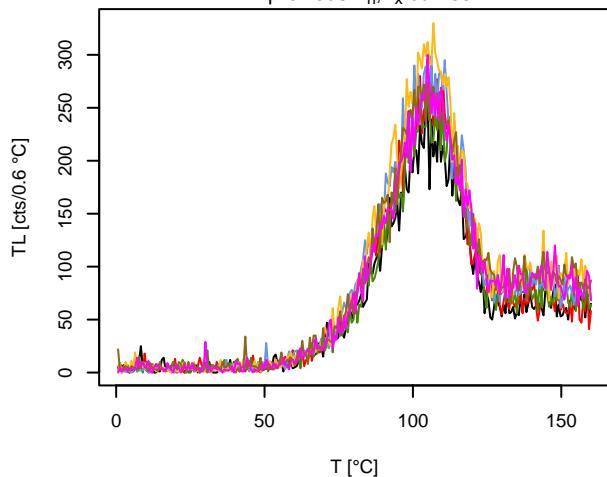
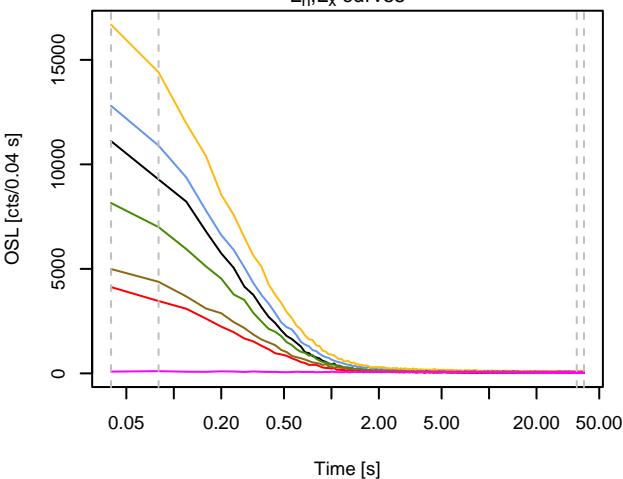
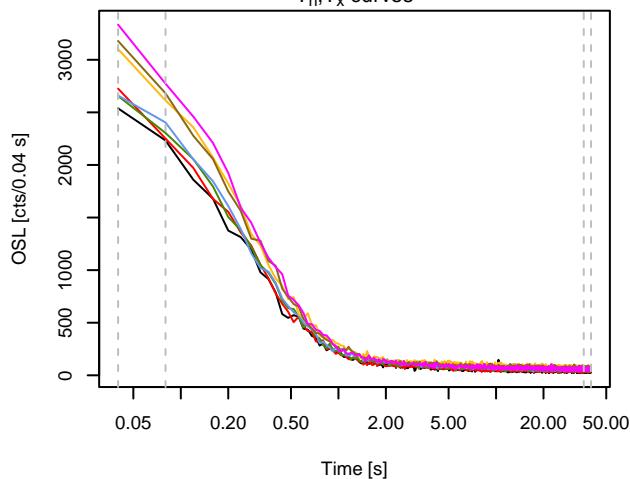
$D_e = 623.25 [600.63 ; 635.8]$



IR-RF

$D_e = 610.17 [556.54 ; 663.8]$



TL previous L_n, L_x curvesTL previous T_n, T_x curves L_n, L_x curves T_n, T_x curves

Natural
(0)

R1
(450)

R2
(1050)

R3
(2000)

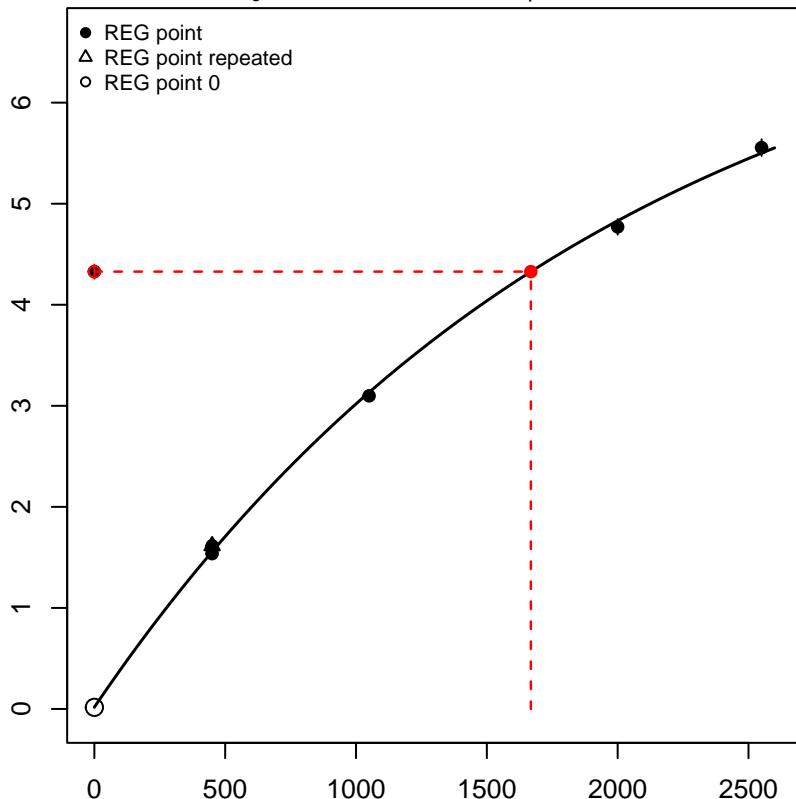
R4
(2550)

R5
(450)

R0
(0)

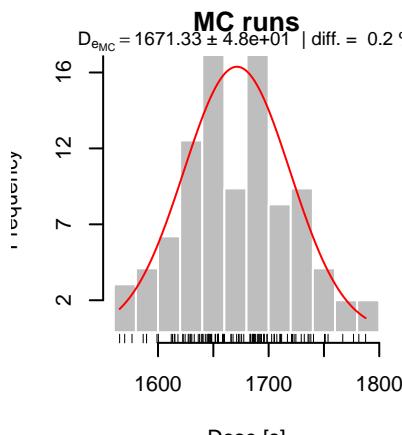
Dose-response curve

$D_e = 1668.25 \pm 4.8e+01$ | fit: EXP



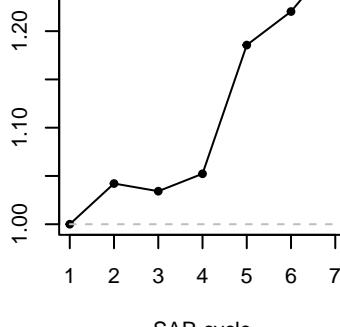
MC runs

$D_{e_{MC}} = 1671.33 \pm 4.8e+01$ | diff. = 0.2 %



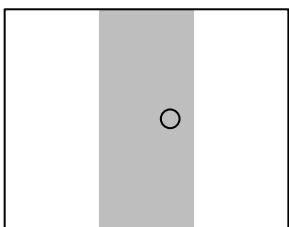
Test-dose response

$\cdot \chi^2 / \nu$

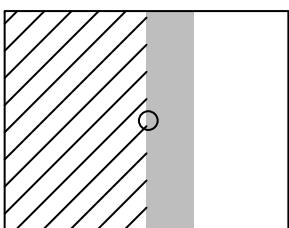


Rejection criteria

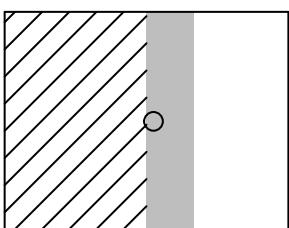
Recycling R.



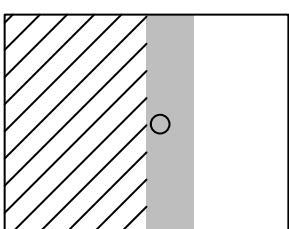
Recuperation



Testdose Err.

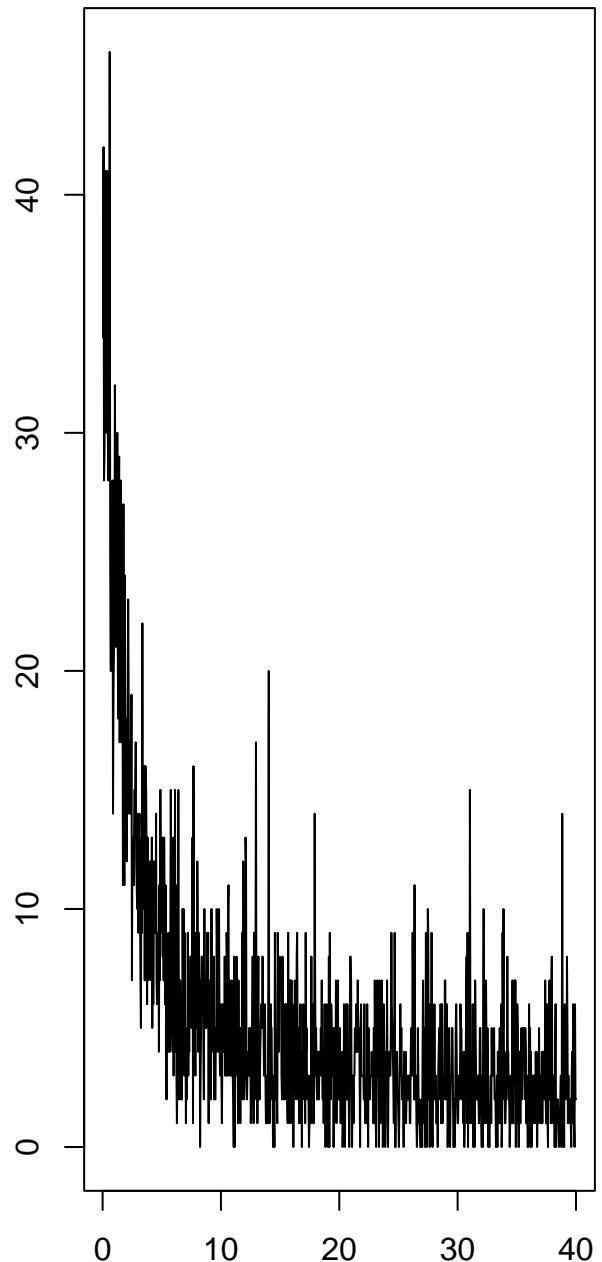


Palaeodose Err.

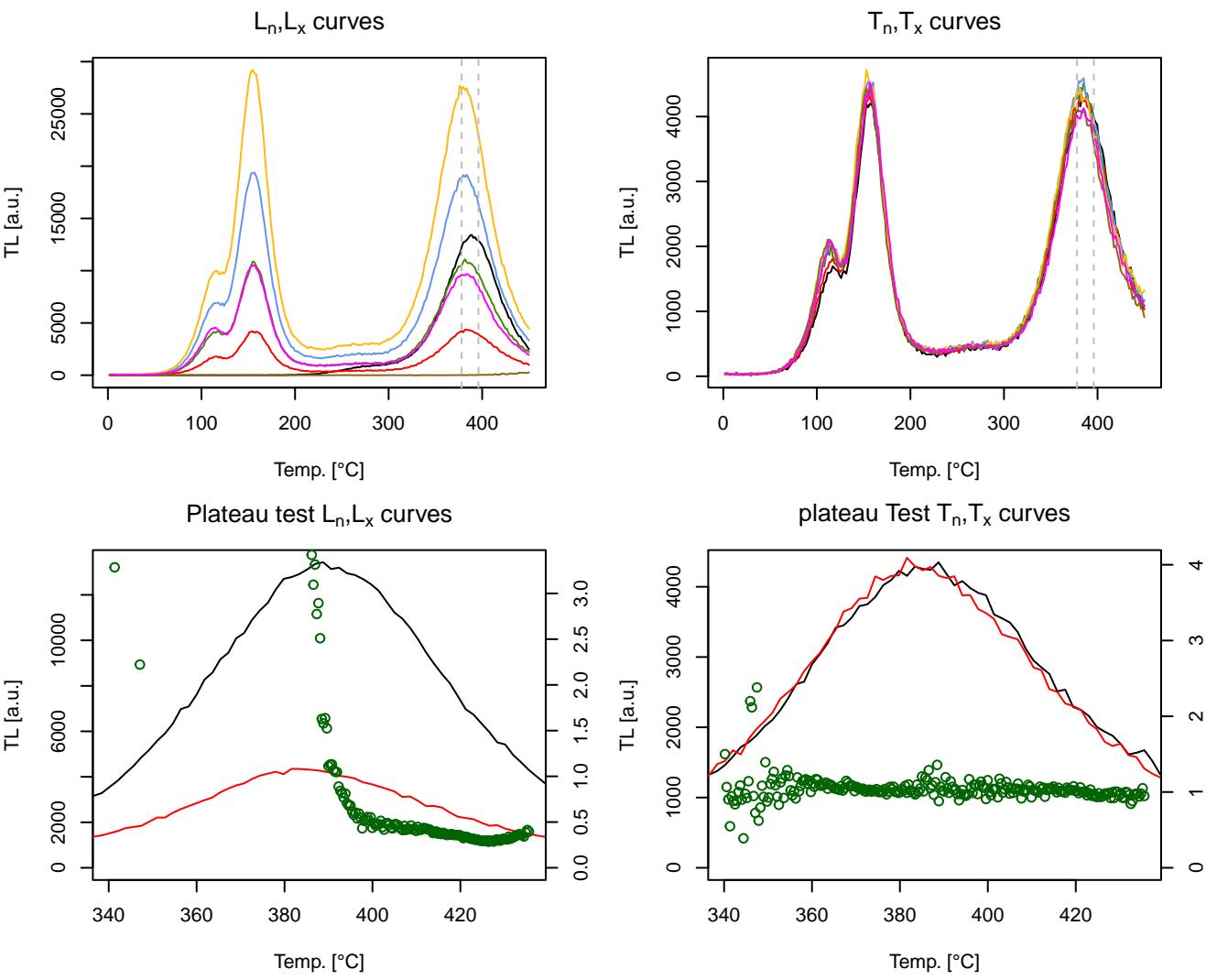


- 0.2 0/1 + 0.2

IRSL



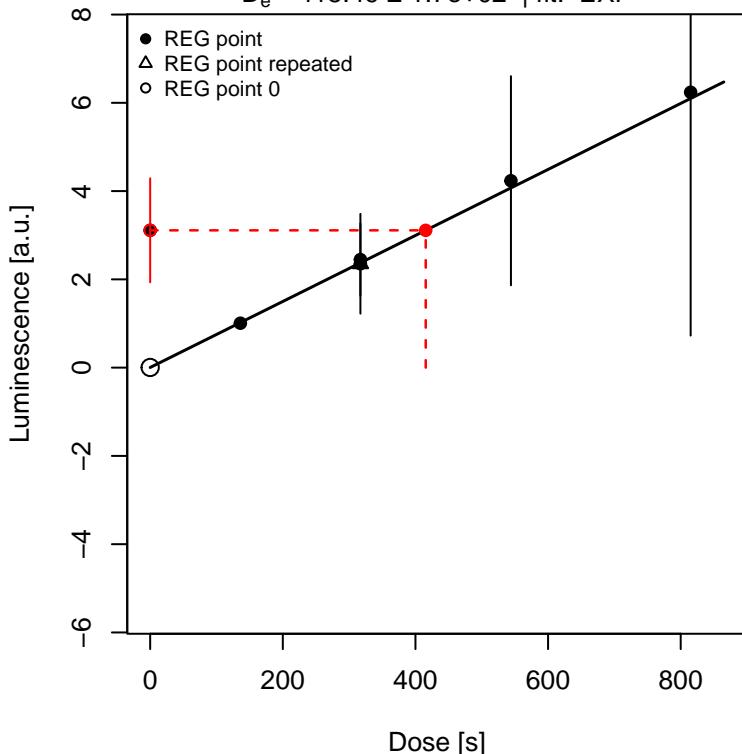
help("analyse_SAR.CWOSL")



	Natural (0)		R1 (136)		R2 (317)		R3 (544)		R4 (815)		R0 (0)		R6 (317)
--	----------------	--	-------------	--	-------------	--	-------------	--	-------------	--	-----------	--	-------------

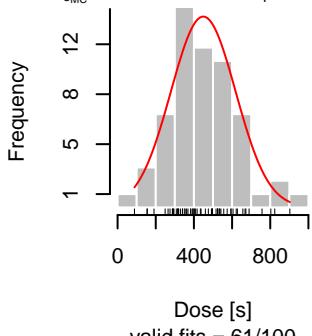
Dose-response curve

$D_e = 415.49 \pm 1.7e+02$ | fit: EXP

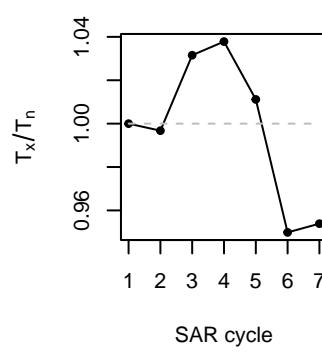


MC runs

$D_{eMC} = 448.95 \pm 1.7e+02$ | diff. = 8.1 %



Test-dose response



valid fits = 61/100

Pseudo pIRIR data set based on quartz OSL

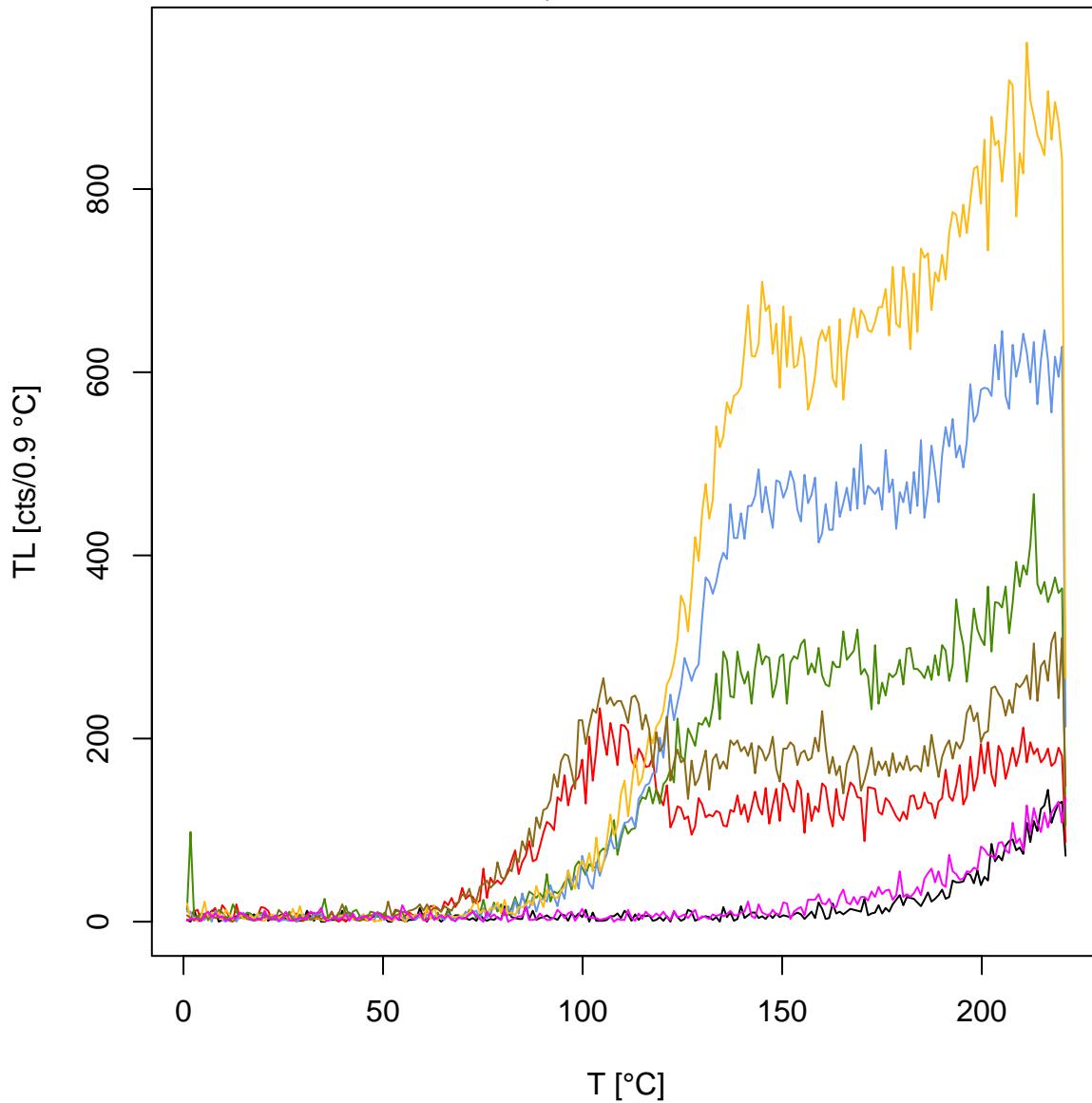
```
help("analyse_pIRIRSequence")
```

TL
pseudoIRSL1
pseudoIRSL2

Pseudo pIRIR data set based on quartz OSL

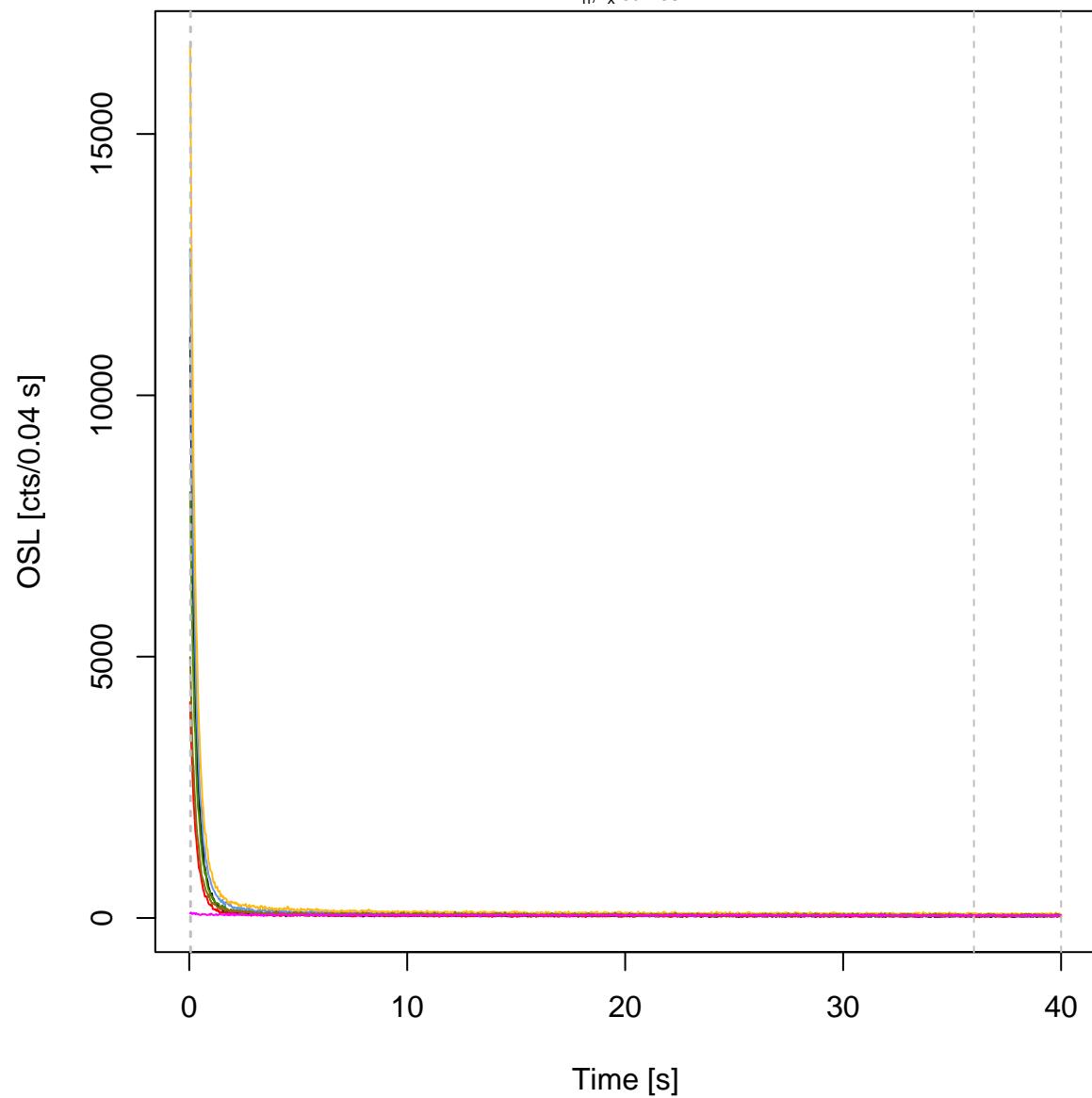
TL previous L_n, L_x curves

help("analyse_pIRIRSequence")



Pseudo pIRIR data set based on quartz OSL

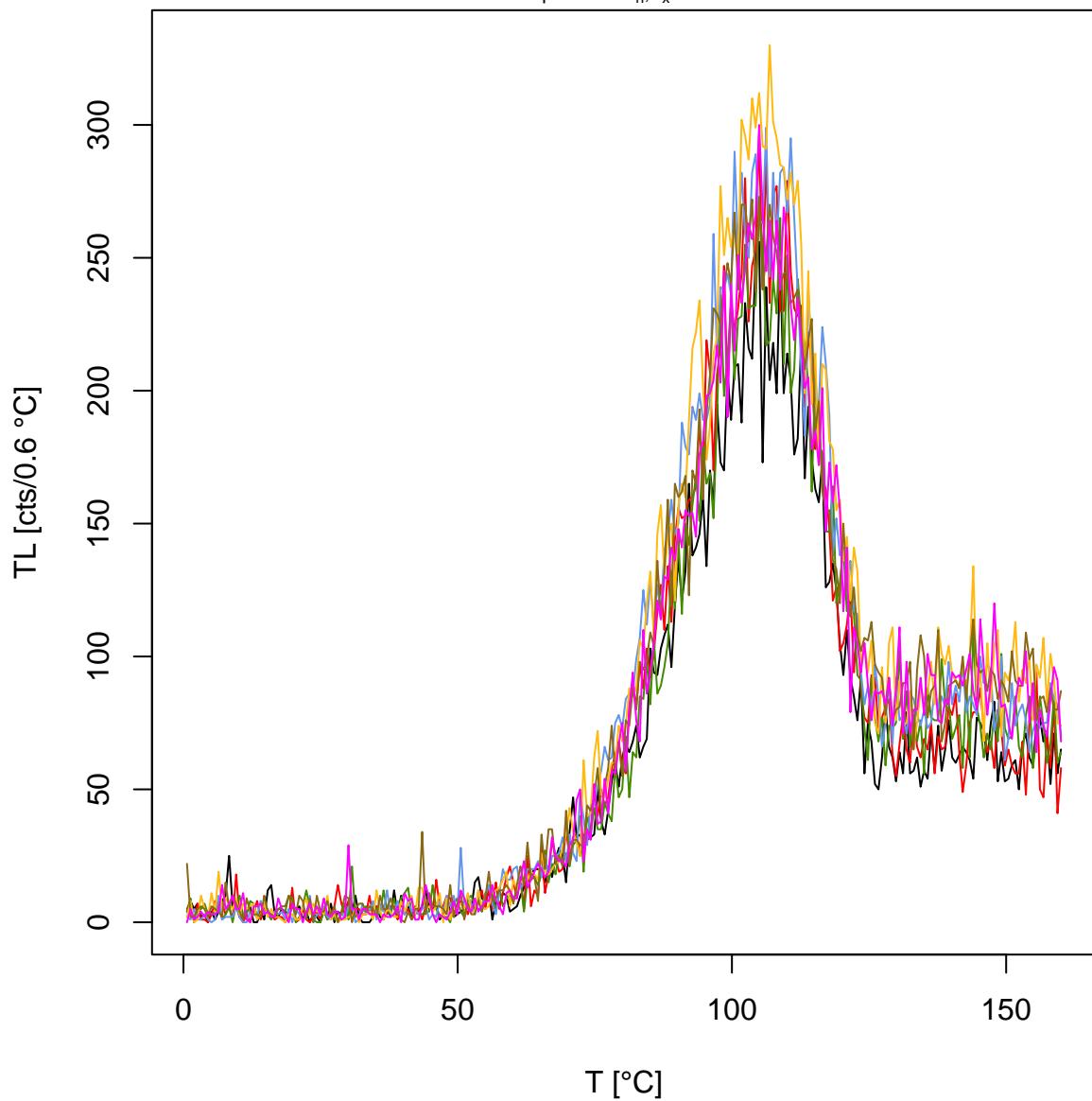
L_n, L_x curves



help("analyse_pIRIRSequence")

Pseudo pIRIR data set based on quartz OSL

TL previous T_n, T_x curves

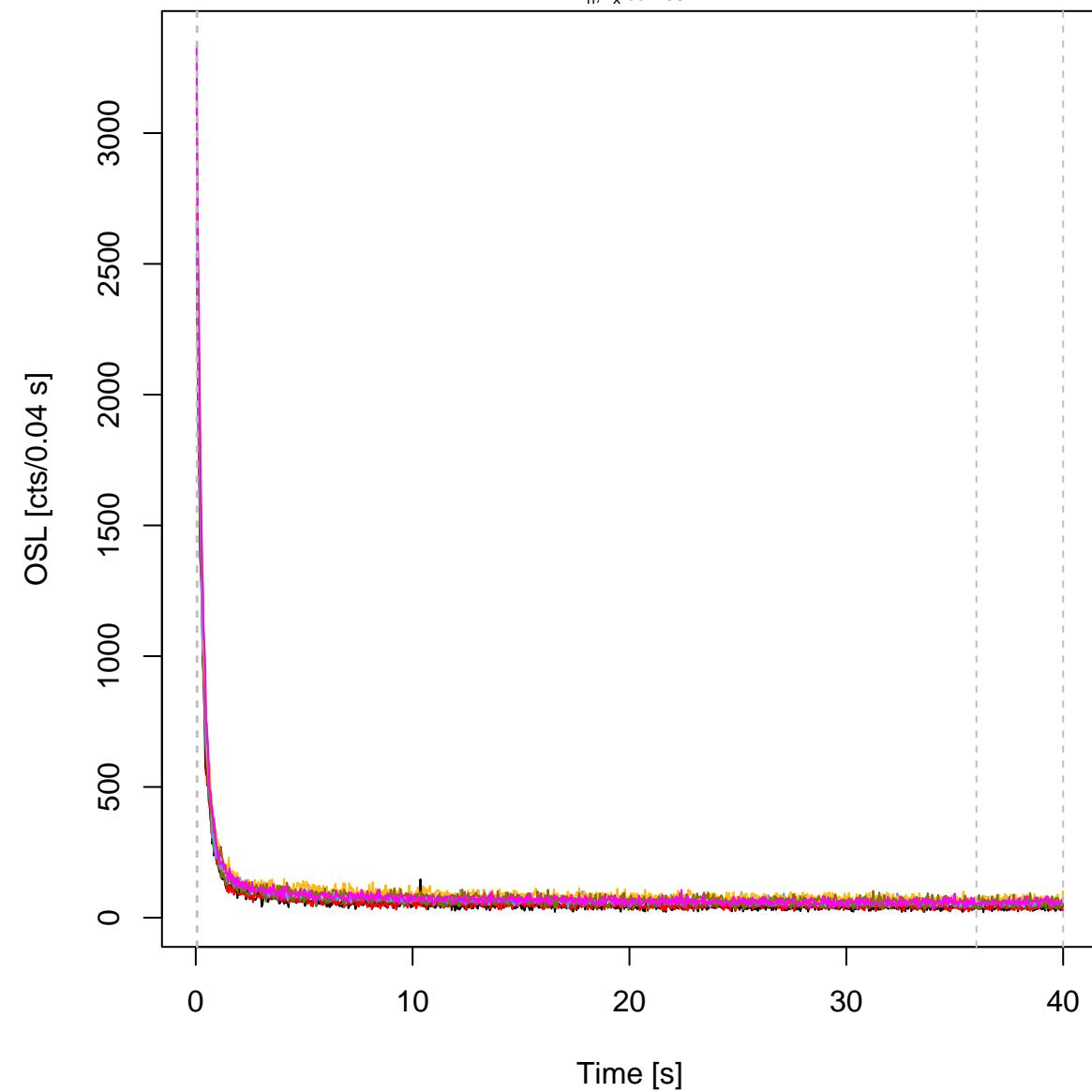


help("analyse_pIRIRSequence")

Pseudo pIRIR data set based on quartz OSL

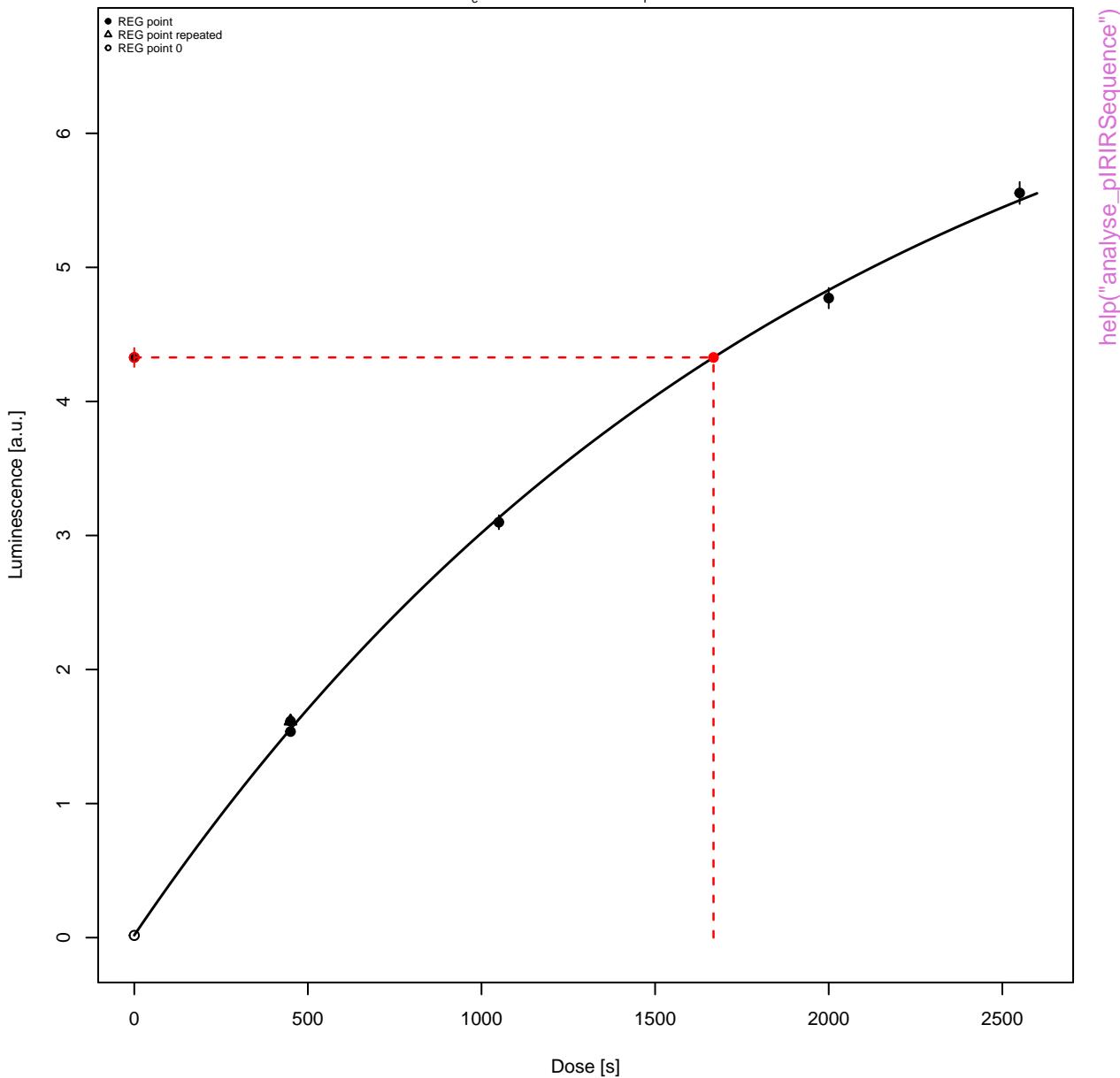
T_n, T_x curves

`help("analyse_pIRIRSequence")`



Pseudo pIRIR data set based on quartz OSL

$D_0 = 1668.25 \pm 4.4\text{e}+01$ | fit: EXP

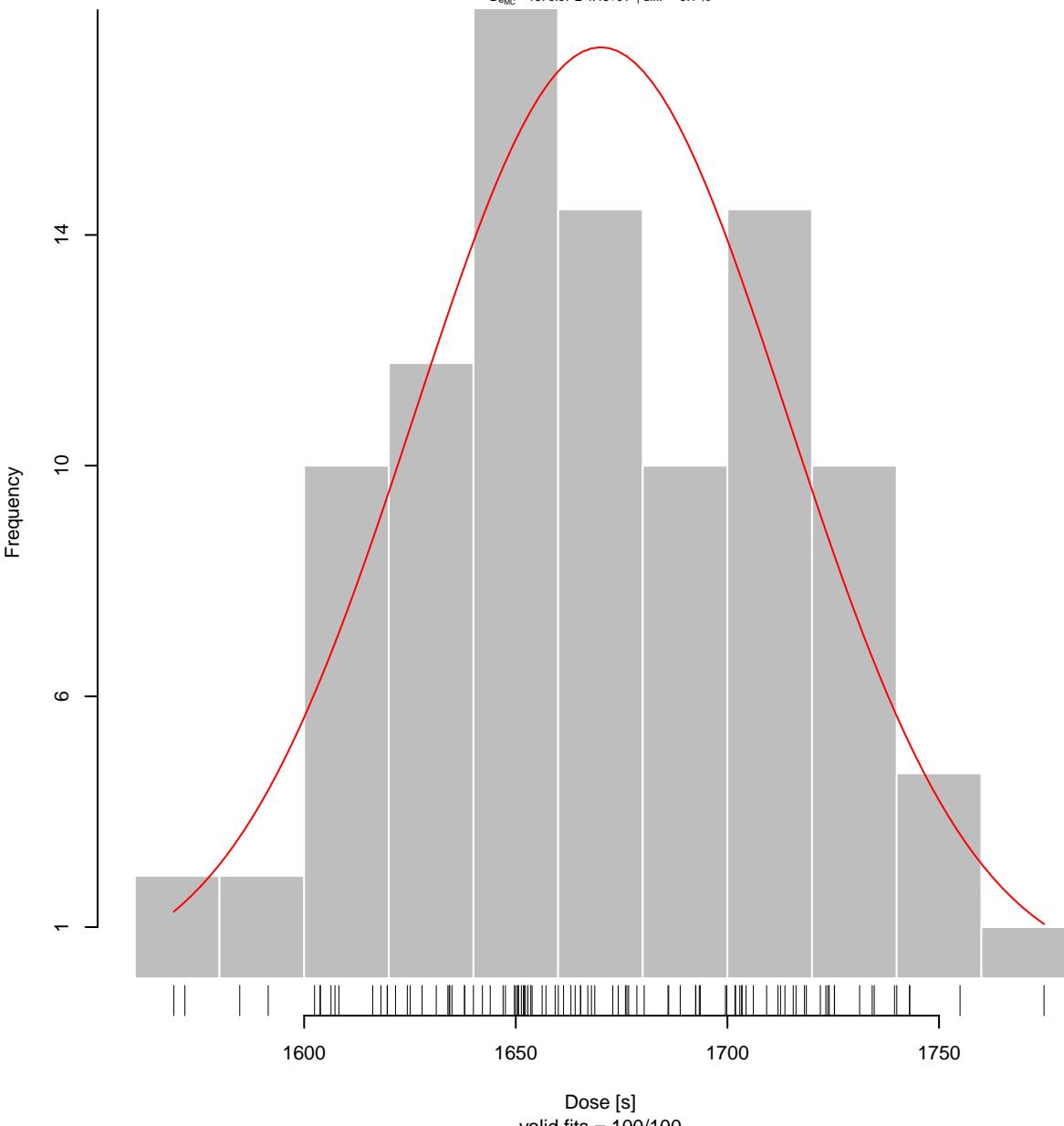


help("analyse_pIRIRSequence")

MC runs

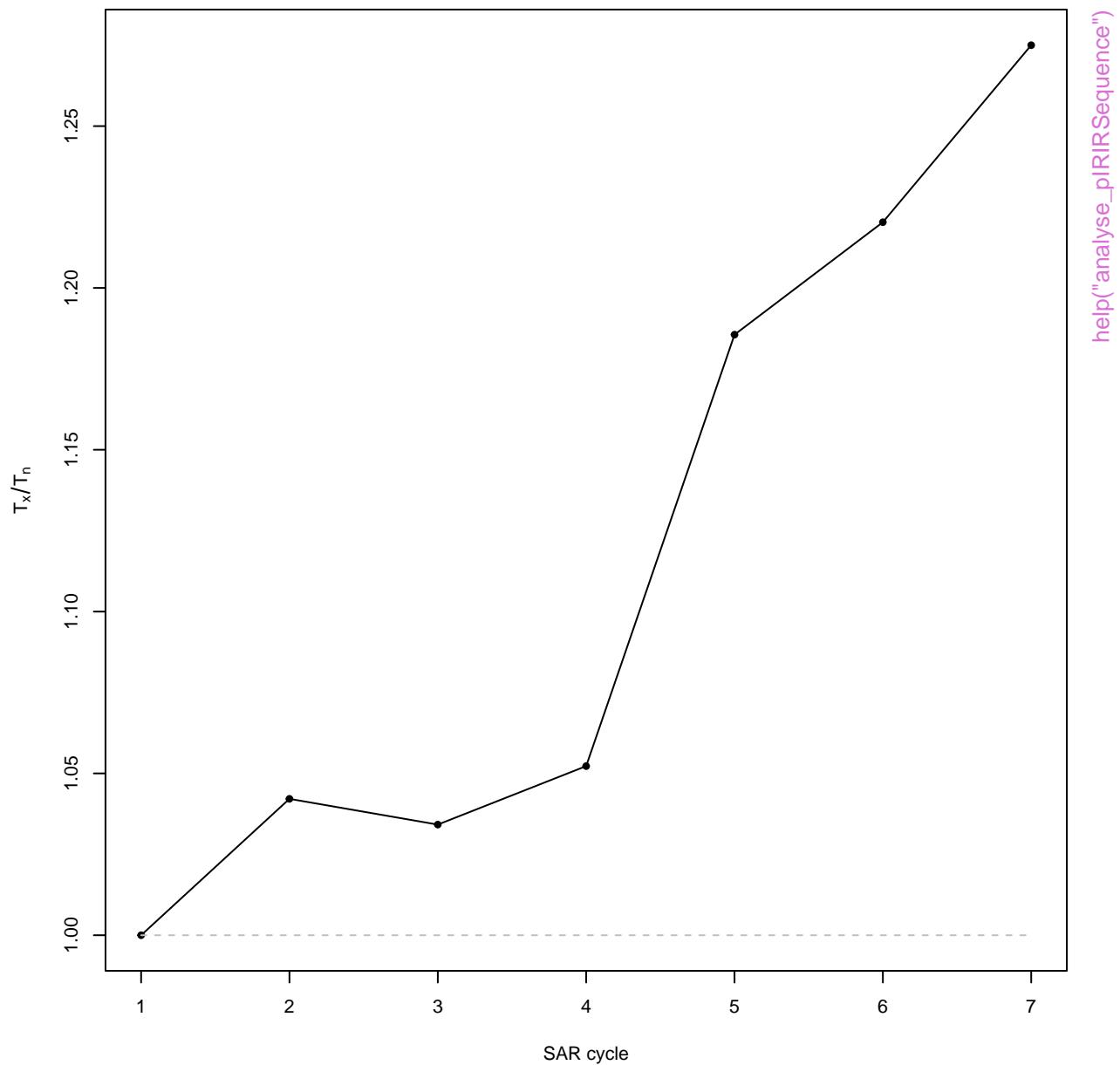
$D_{\text{MC}} = 1670.07 \pm 4.4\text{e+}01$ | diff. = 0.1 %

help("analyse_pIRSequence")



valid fits = 100/100

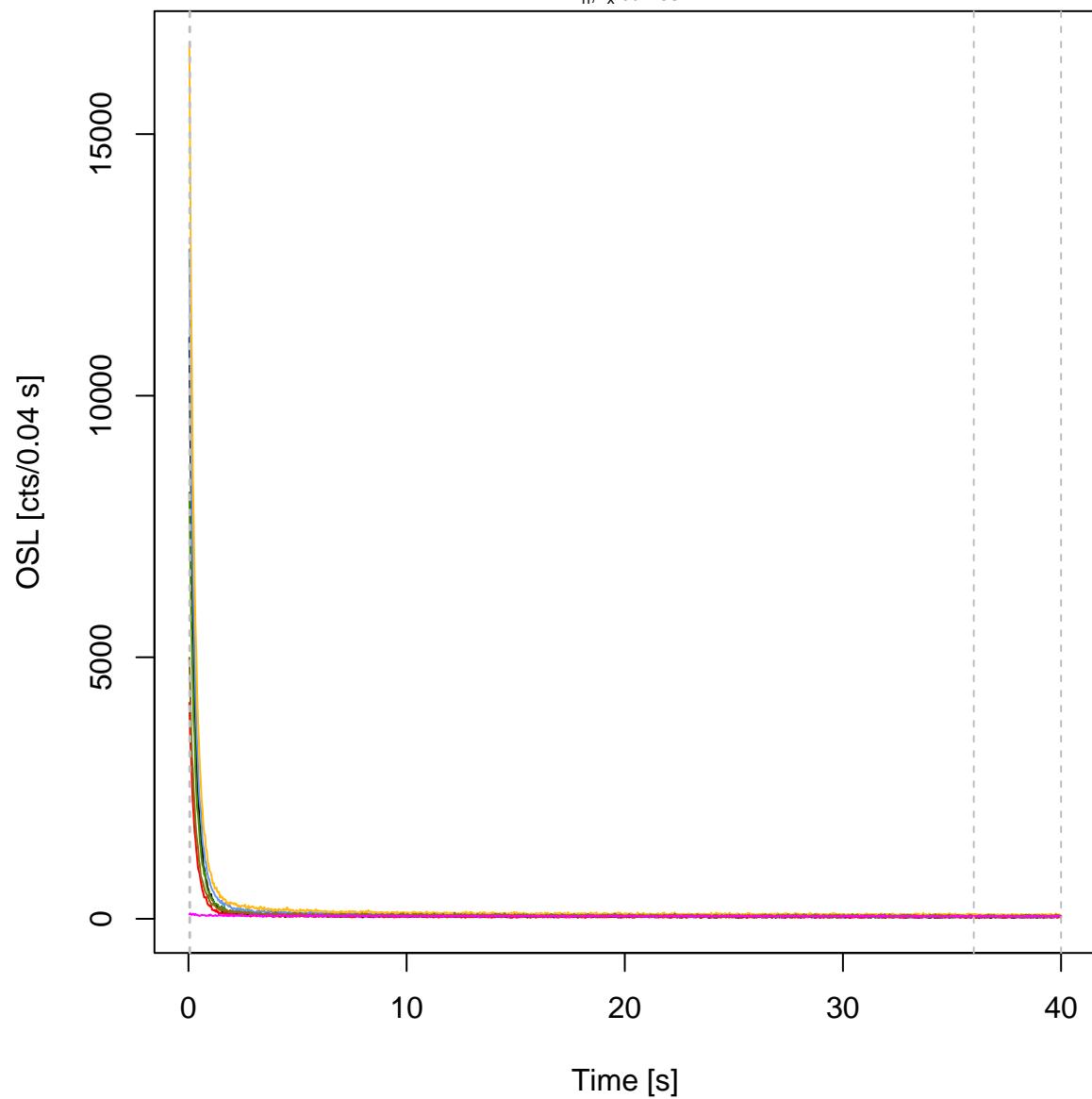
Test-dose response



help("analyse_pIRSequence")

Pseudo pIRIR data set based on quartz OSL

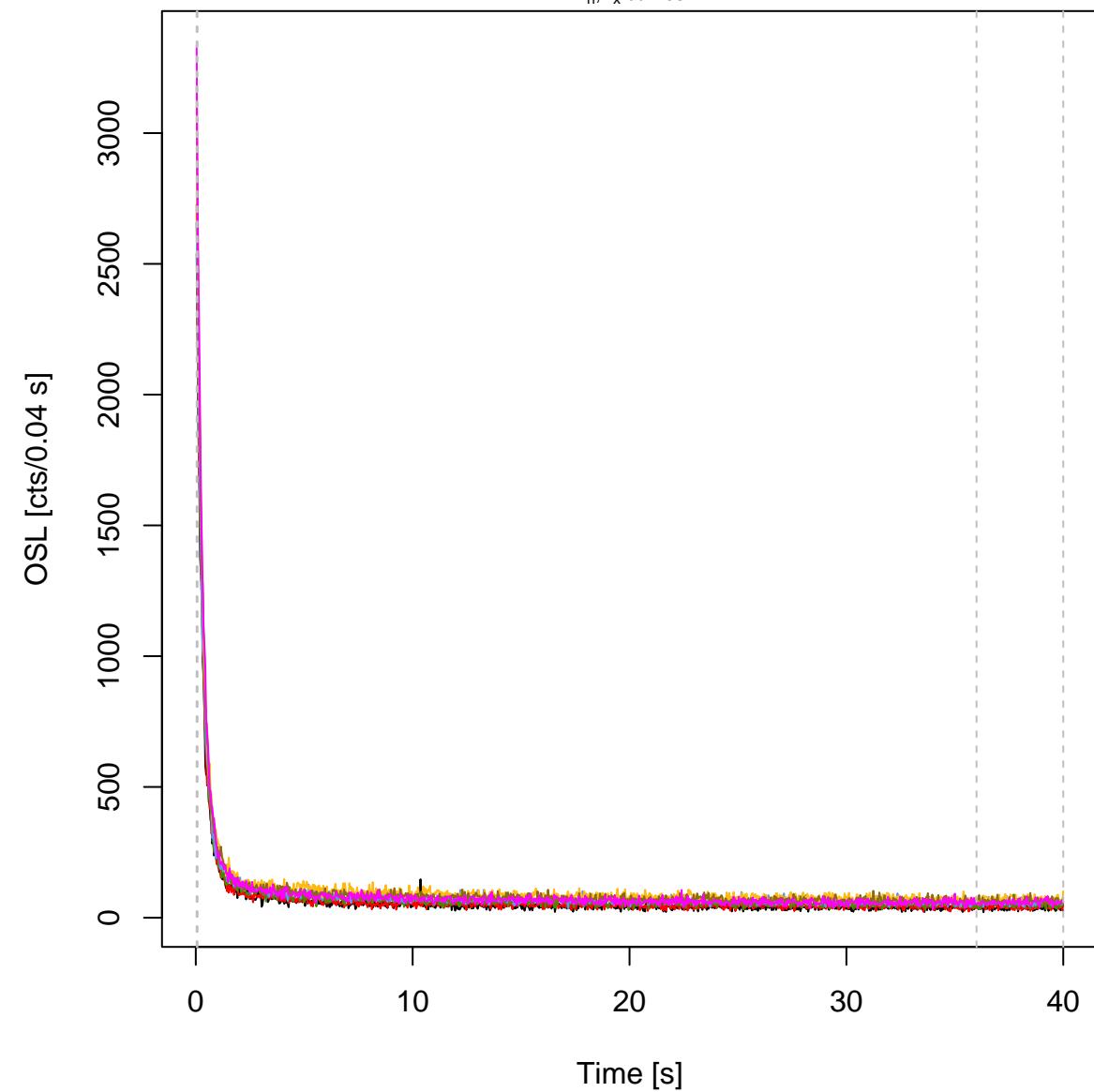
L_n, L_x curves



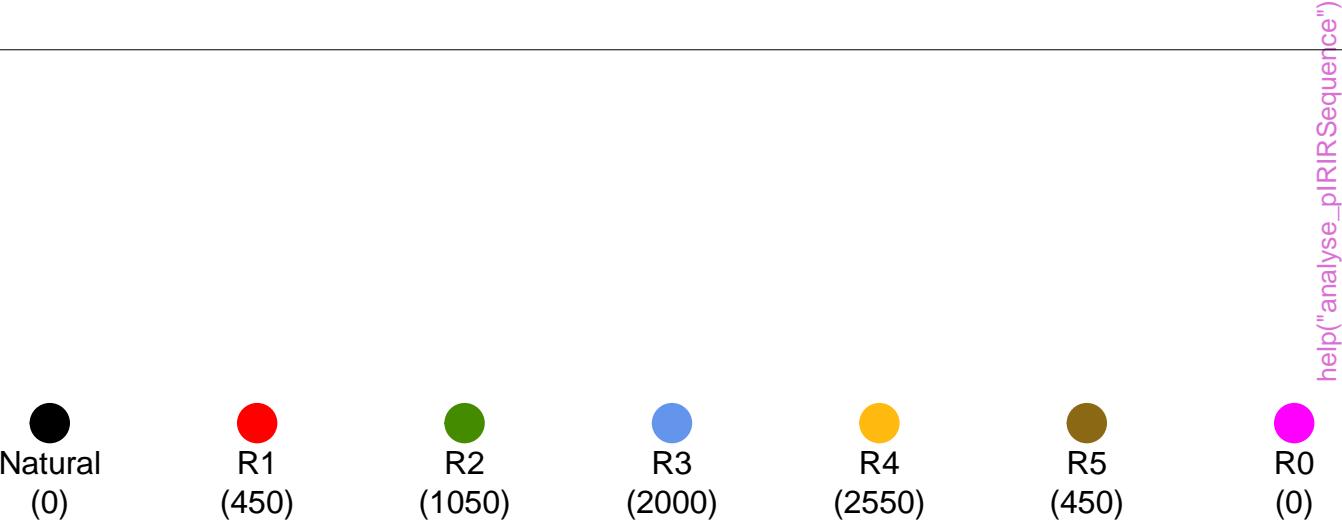
help("analyse_pIRIRSequence")

Pseudo pIRIR data set based on quartz OSL

T_n, T_x curves

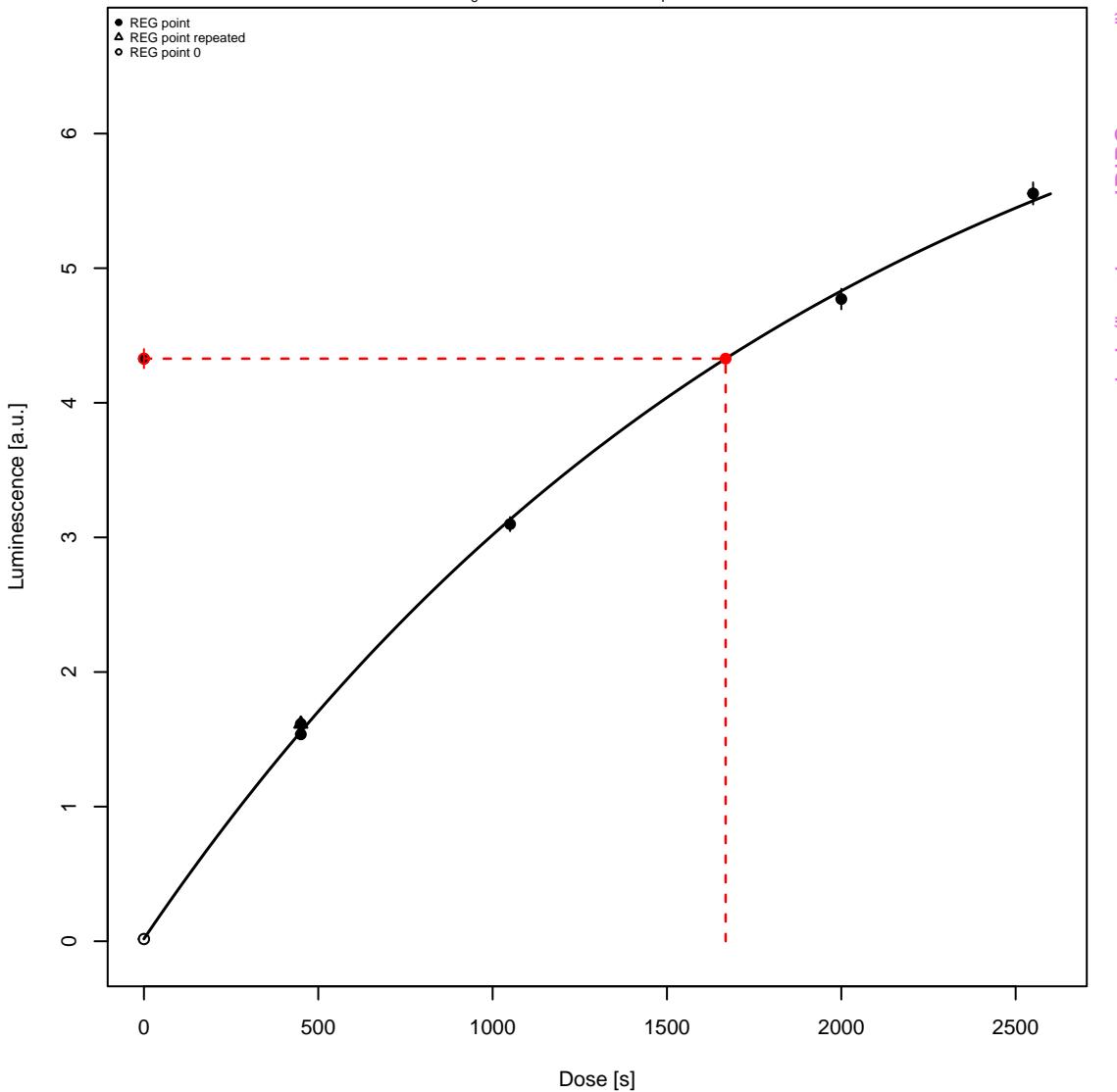


help("analyse_pIRIRSequence")



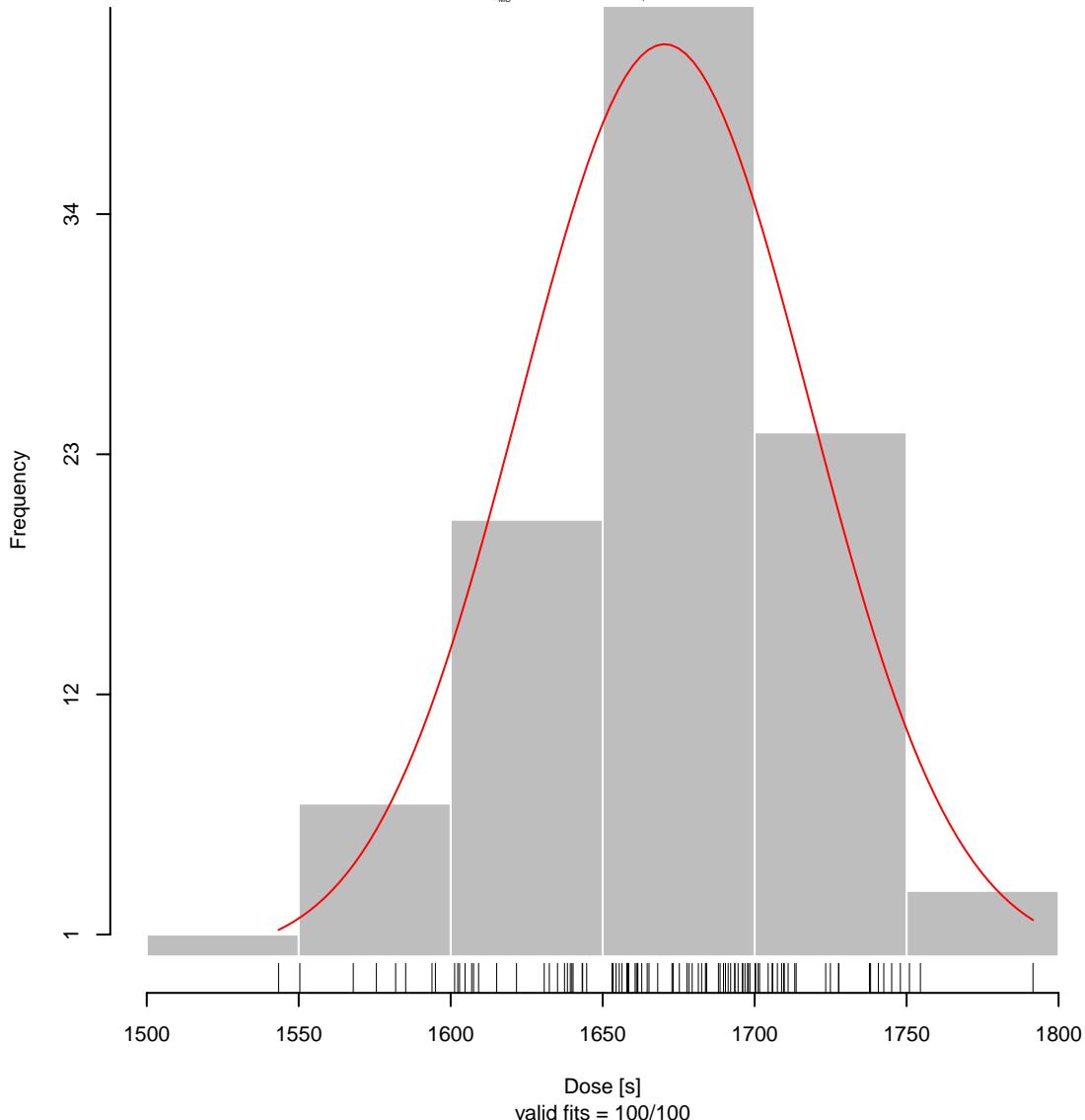
Pseudo pIRIR data set based on quartz OSL

$D_e = 1668.25 \pm 4.8e+01$ | fit: EXP



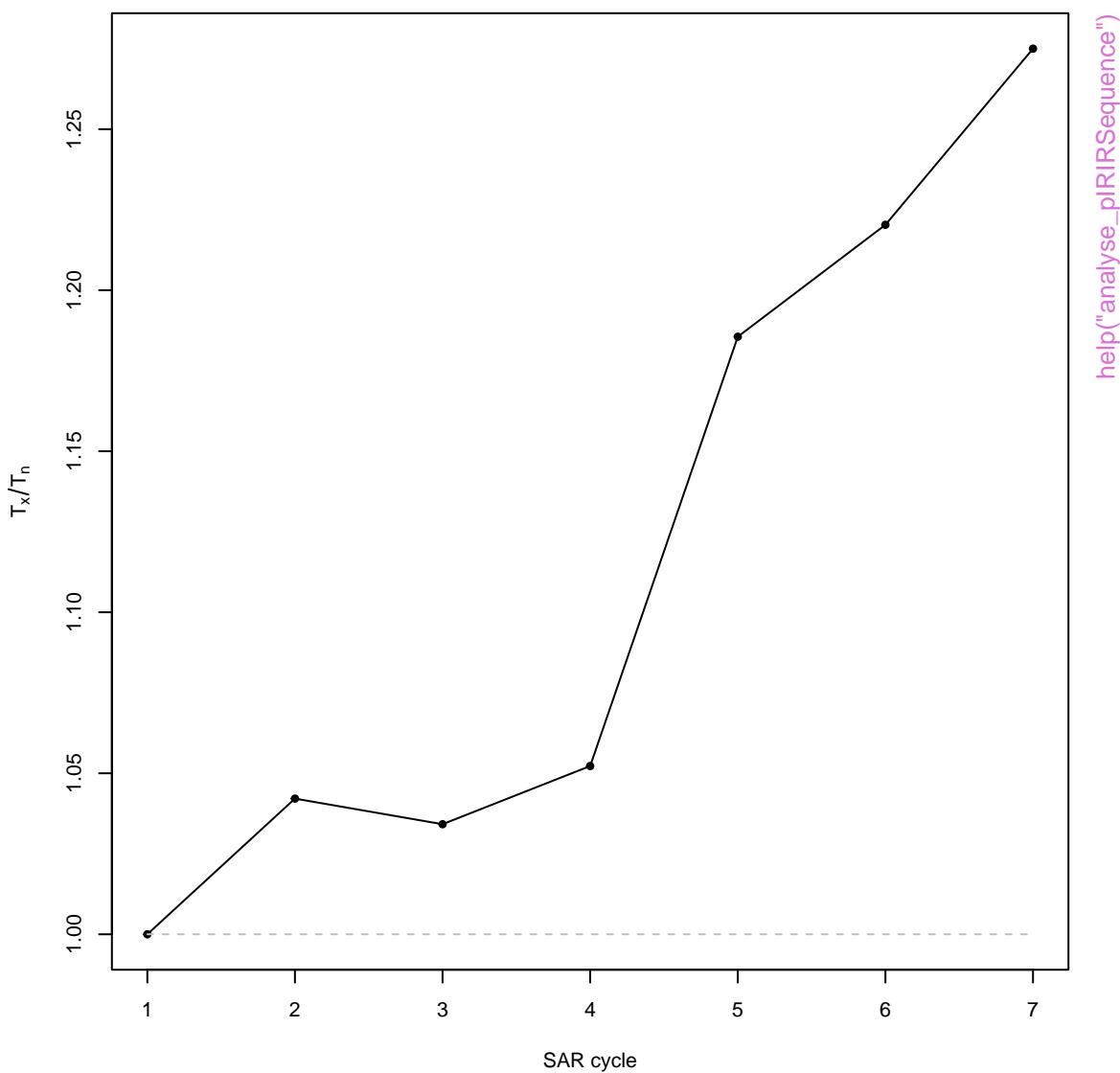
MC runs

$D_{0\text{MC}} = 1670.37 \pm 4.8\text{e}+01$ | diff. = 0.1 %

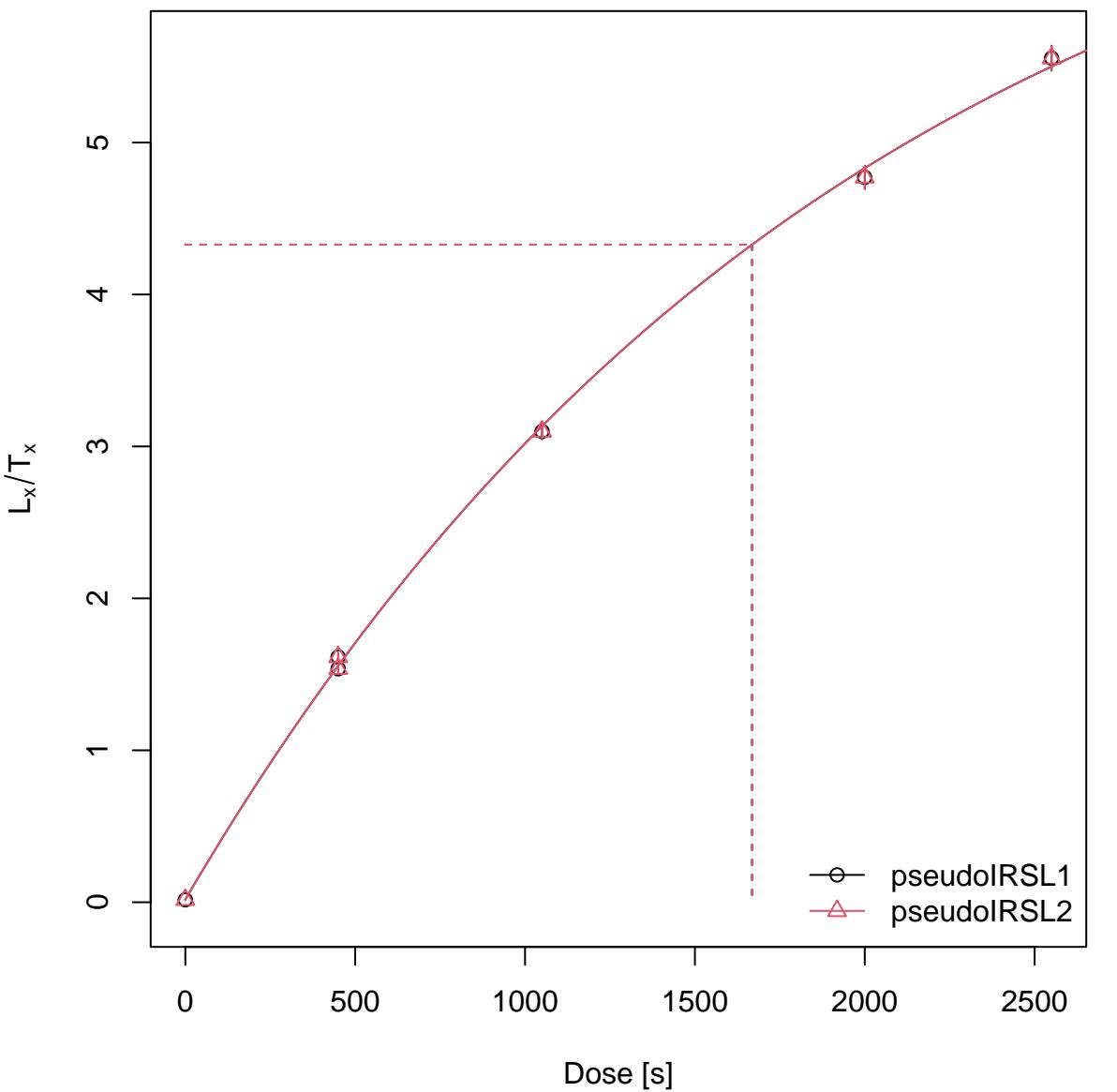


help("analyse_pIRSequence")

Test-dose response

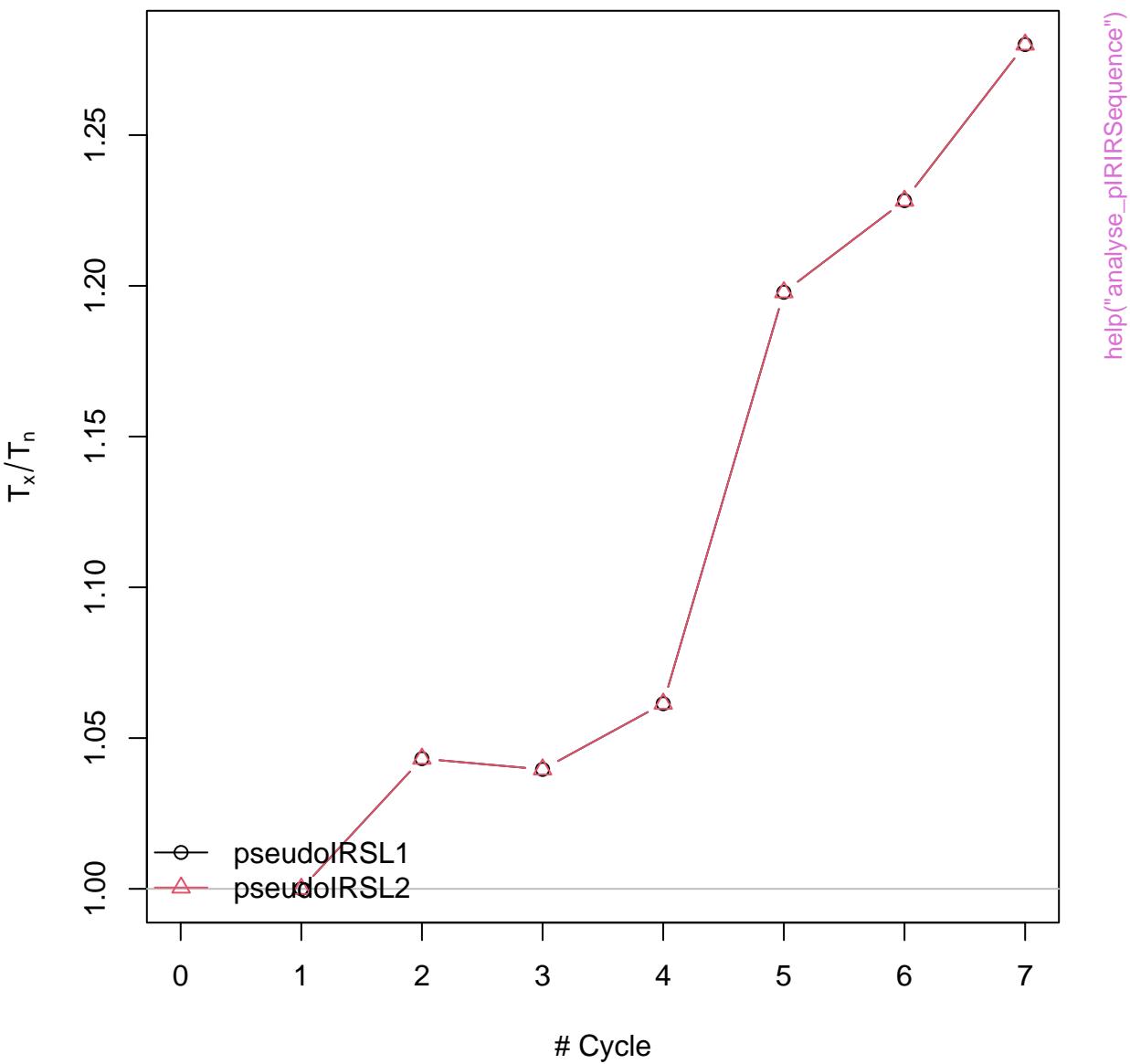


Summarised Dose Response Curves

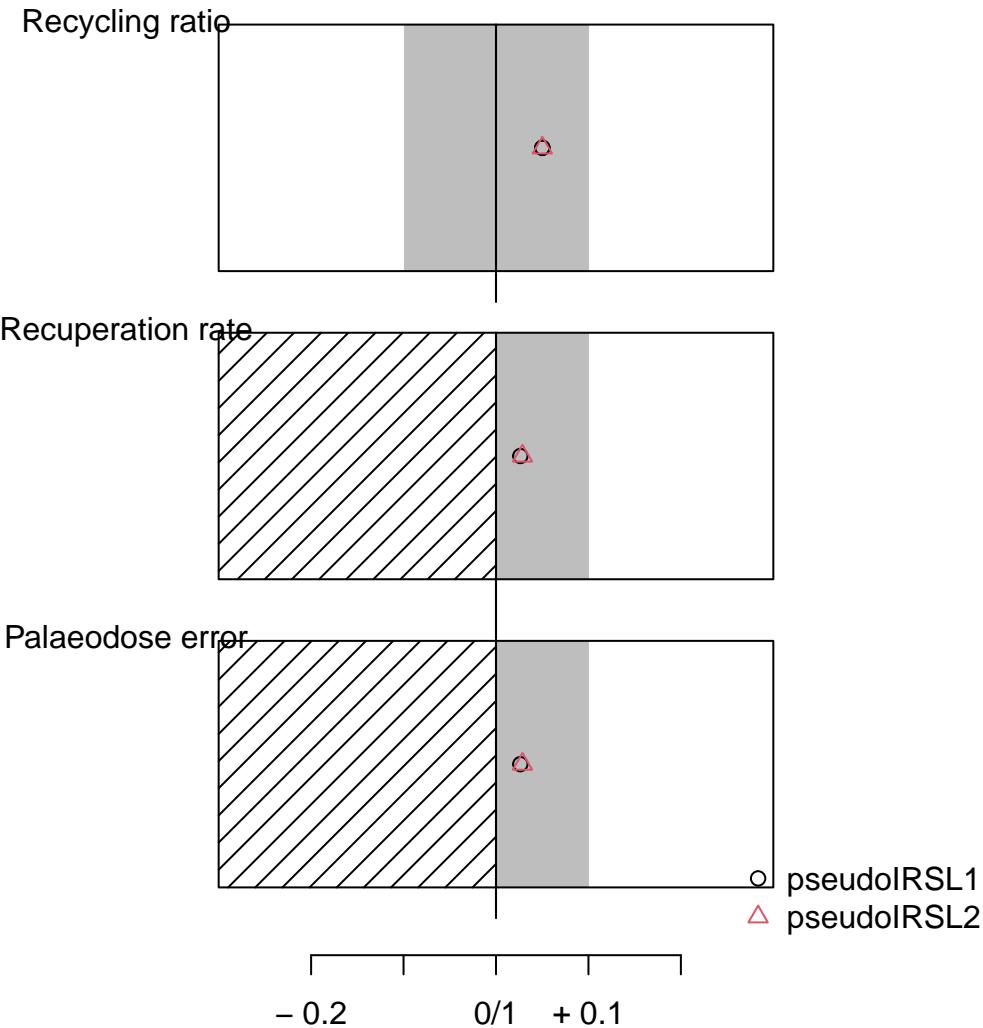


help("analyse_pIRSequence")

Sensitivity change

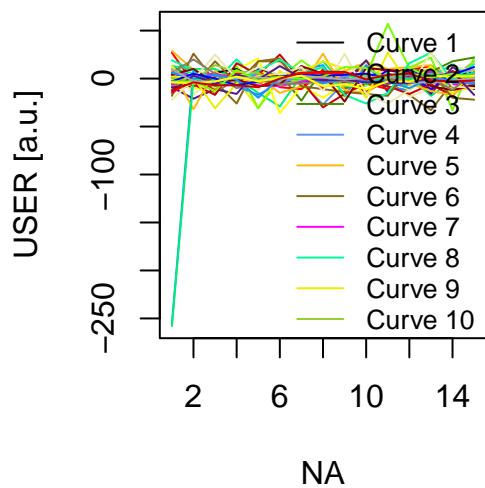


Rejection criteria

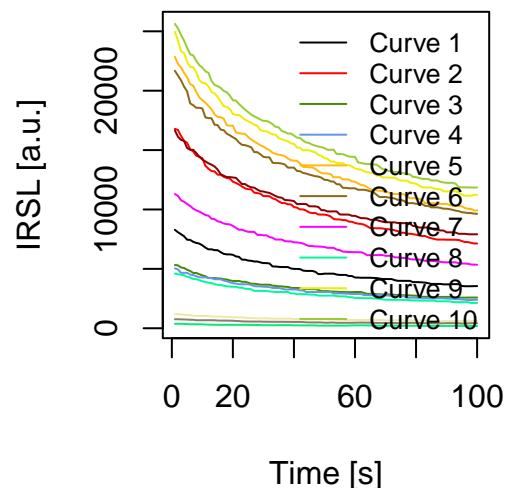


help("analyse_pIRISSequence")

USER combined

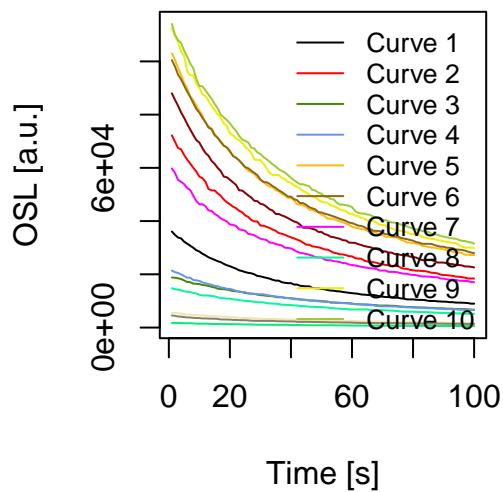


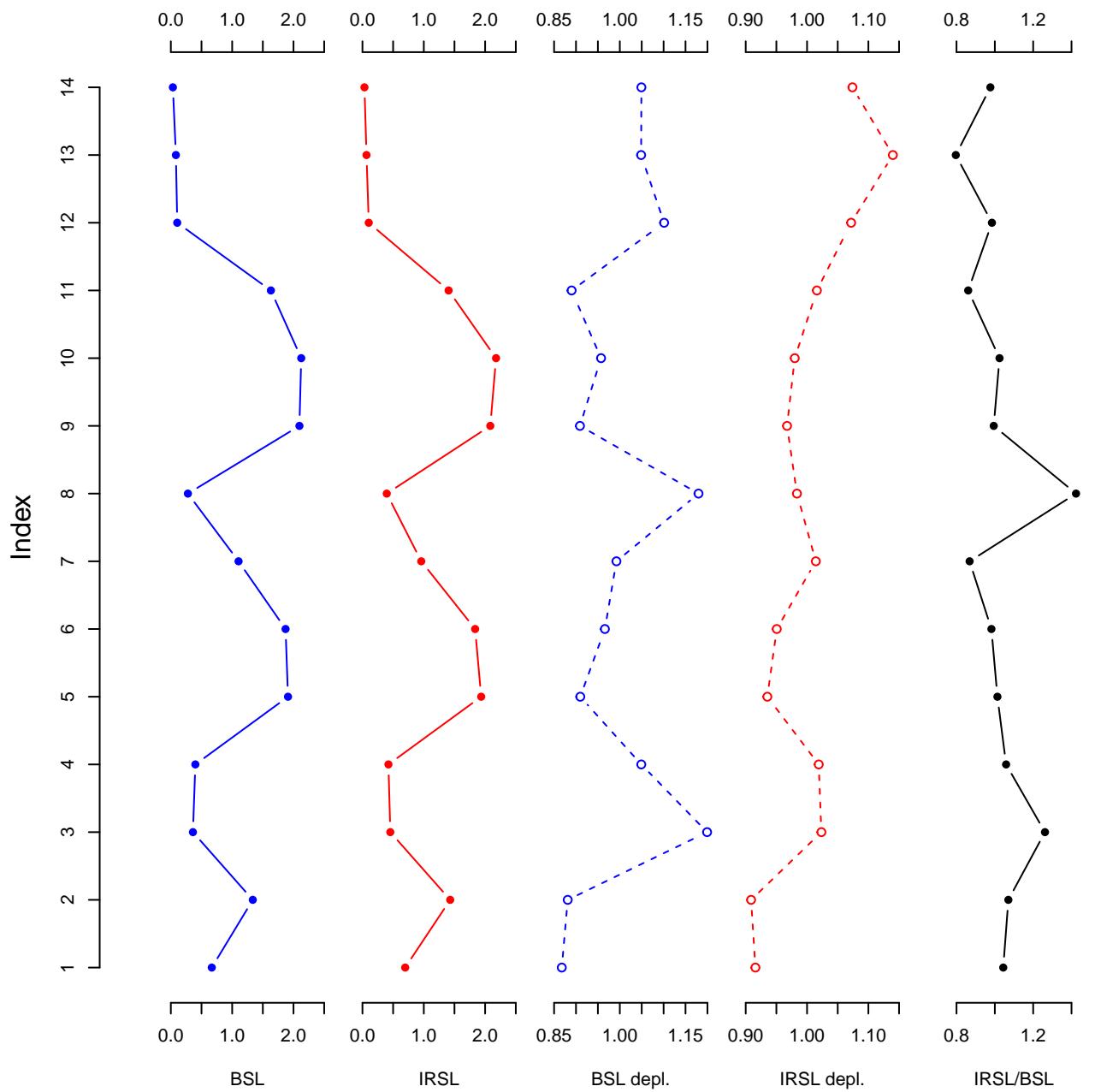
IRSL combined



help("analyse_portableOSL")

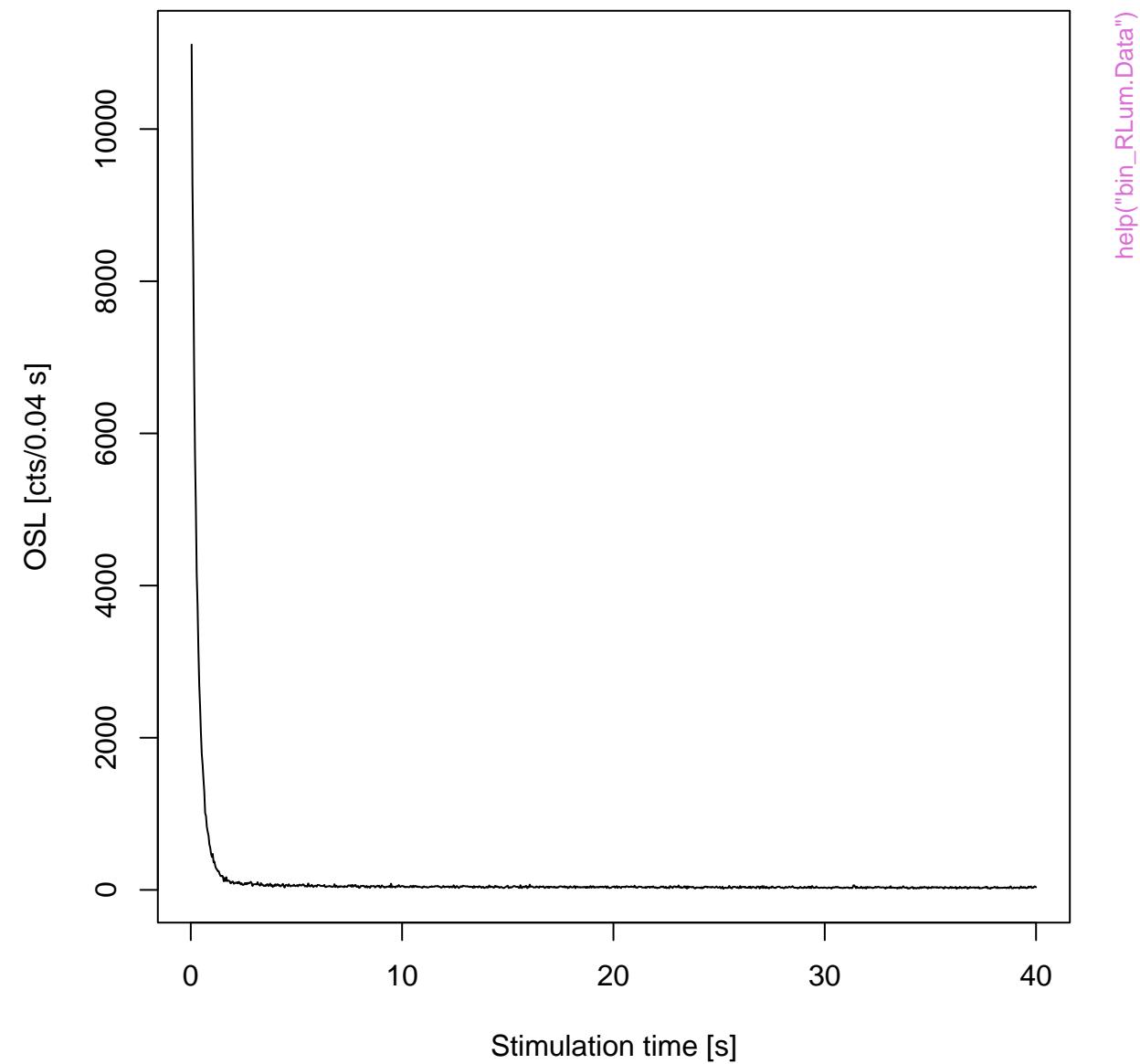
OSL combined





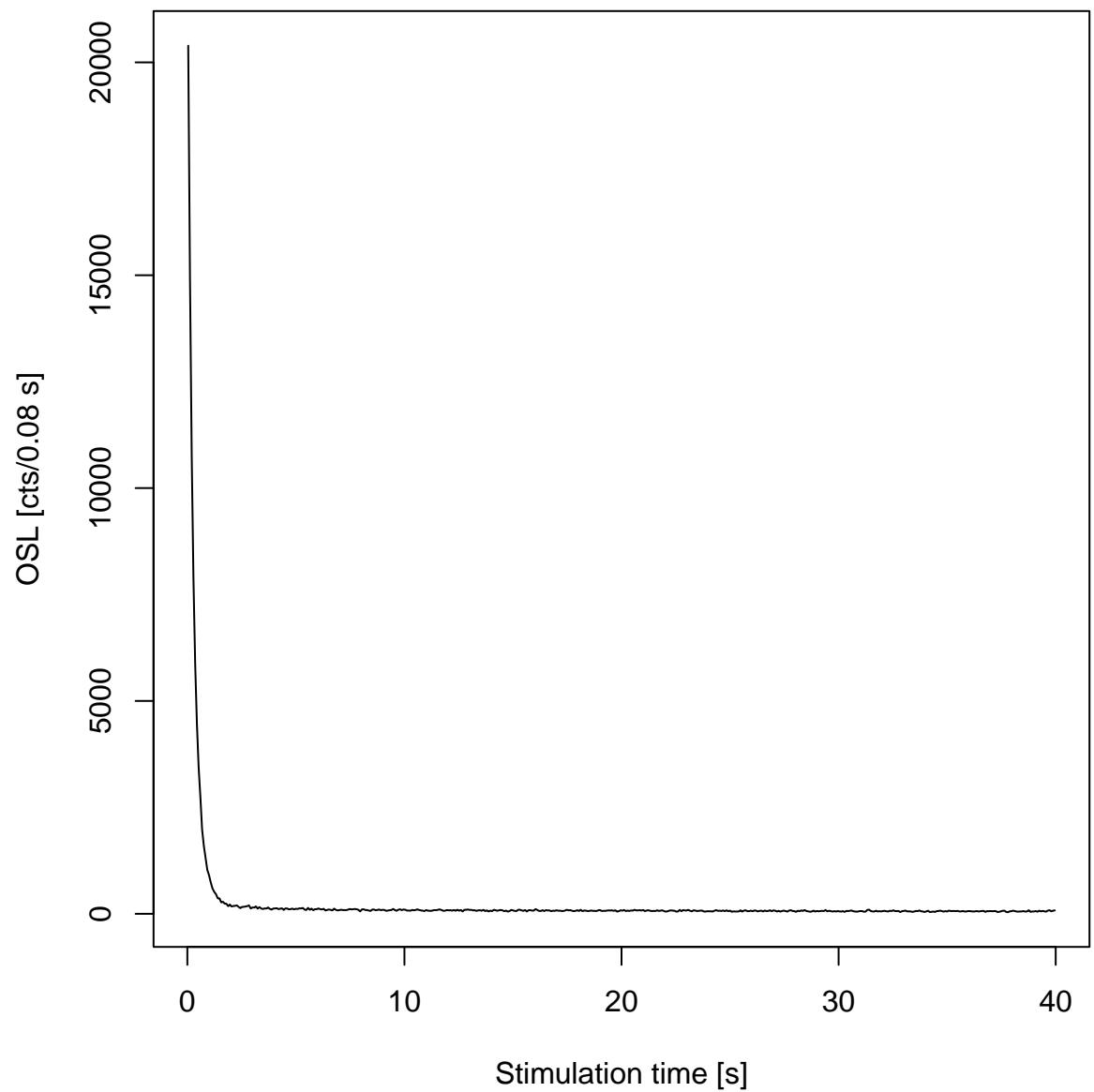
help("analyse_portableOSL")

OSL



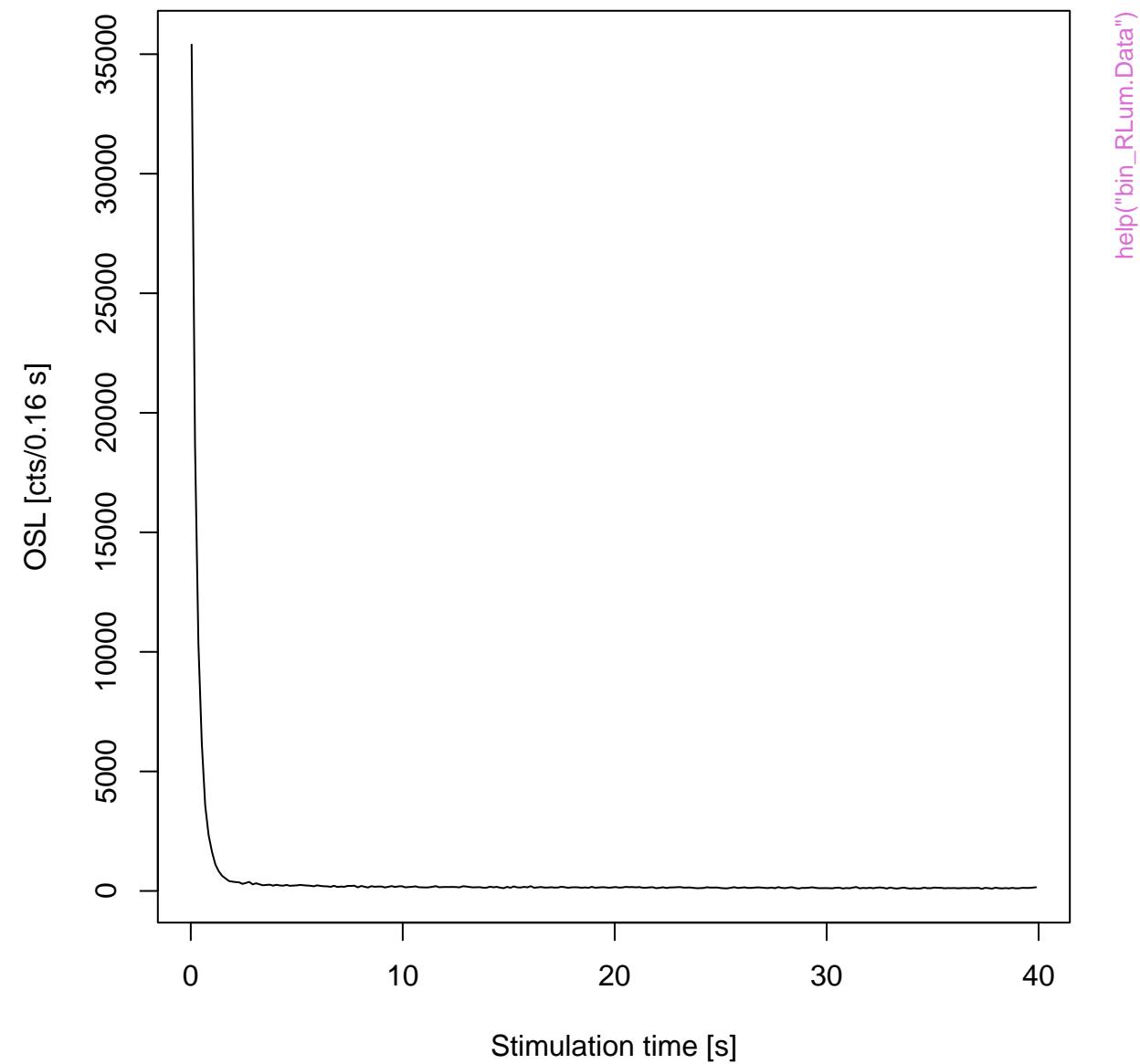
help("bin_RLum.Data")

OSL



help("bin_RLum.Data")

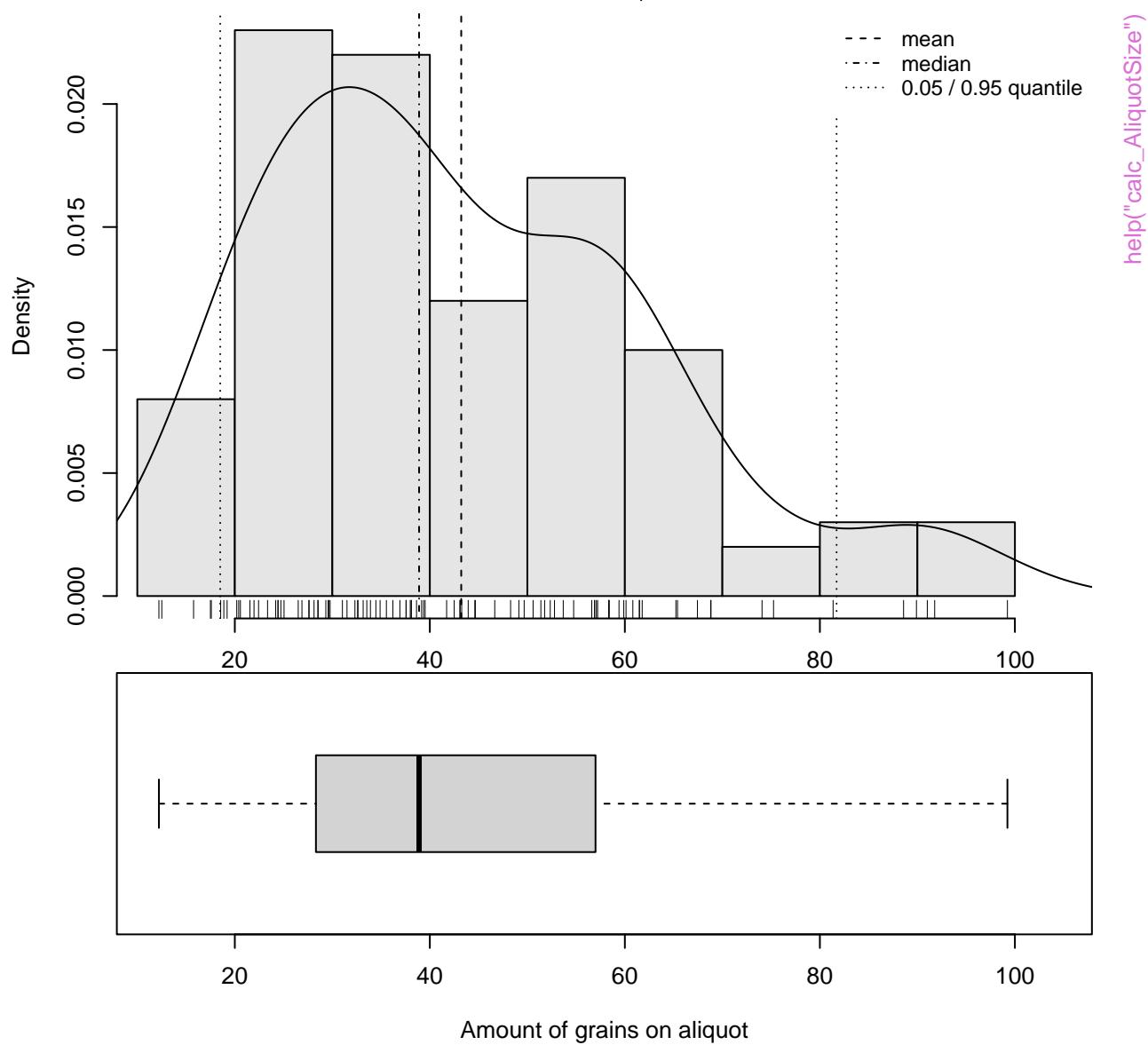
OSL



help("bin_RLum.Data")

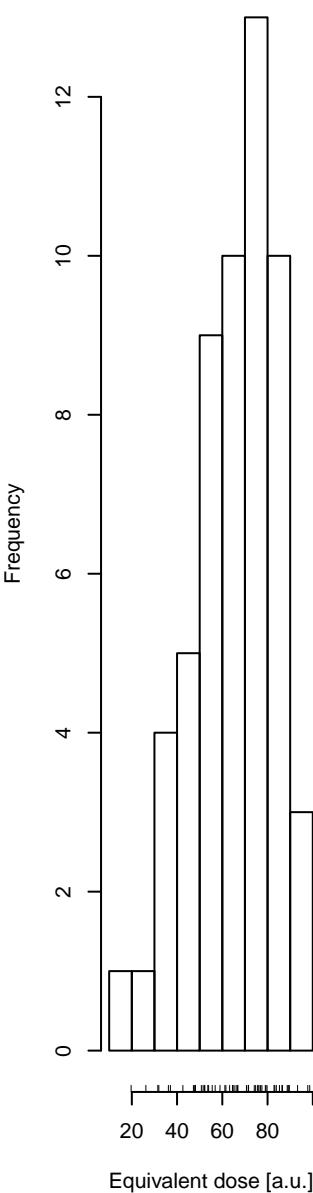
Monte Carlo Simulation

$$n = 100 \mid \hat{\mu} = 43 \mid \hat{\sigma} = 19 \mid \frac{\hat{\sigma}}{\sqrt{n}} = 2 \mid v = 0.73$$



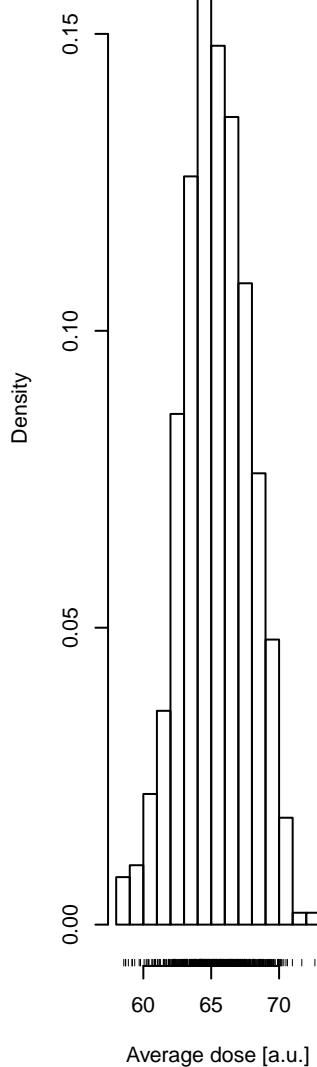
Observed: Equivalent dose

n = 56



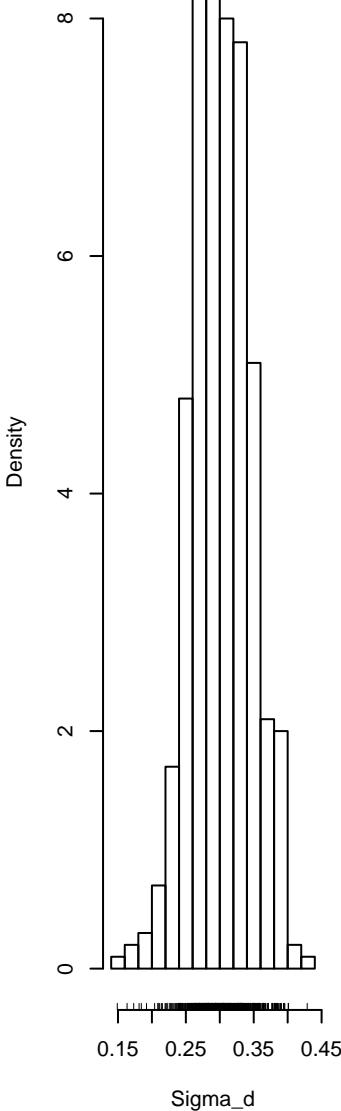
Bootstrapping: Average Dose

n = 500



Bootstrapping: Sigma_d

n = 500

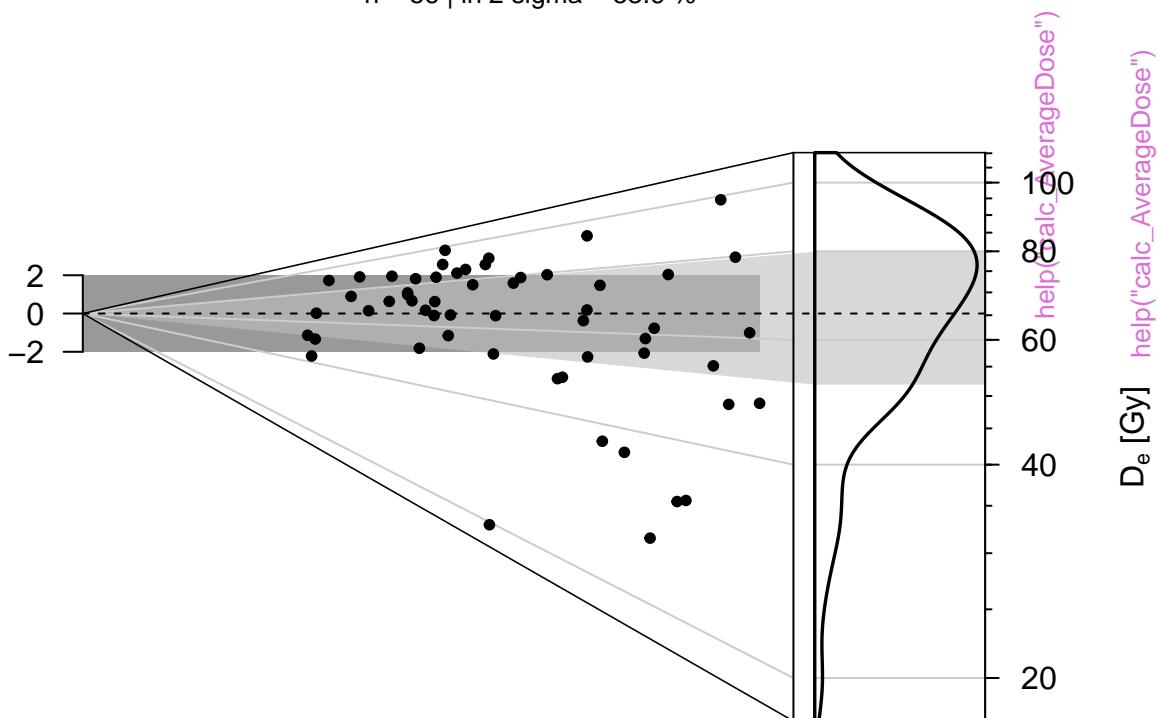


help("calc_AverageDose")

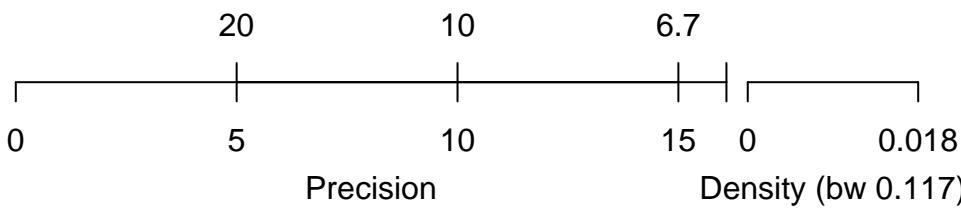
D_e distribution

$n = 56$ | in 2 sigma = 53.6 %

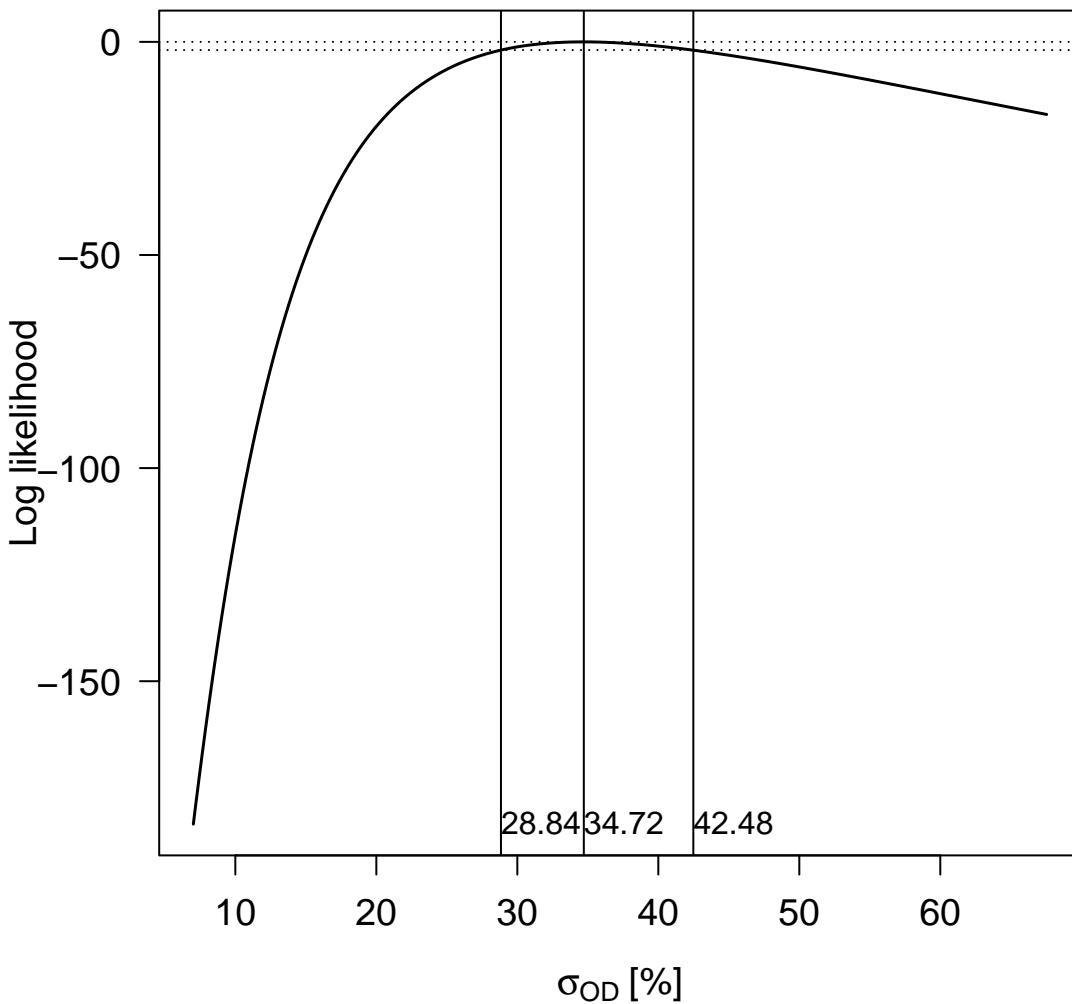
Standardised estimate



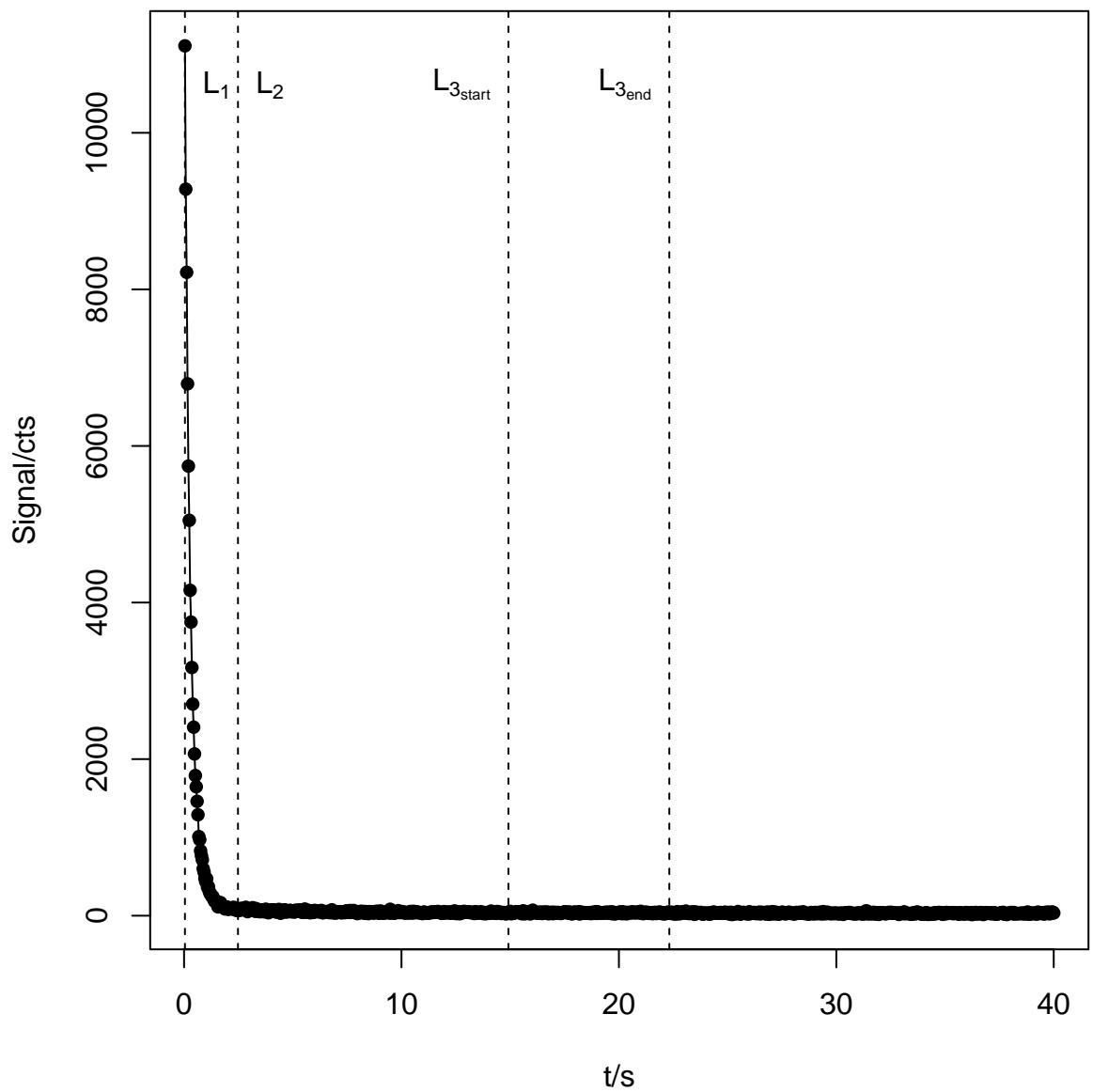
Relative standard error (%)



Profile log likelihood for σ_{OD}



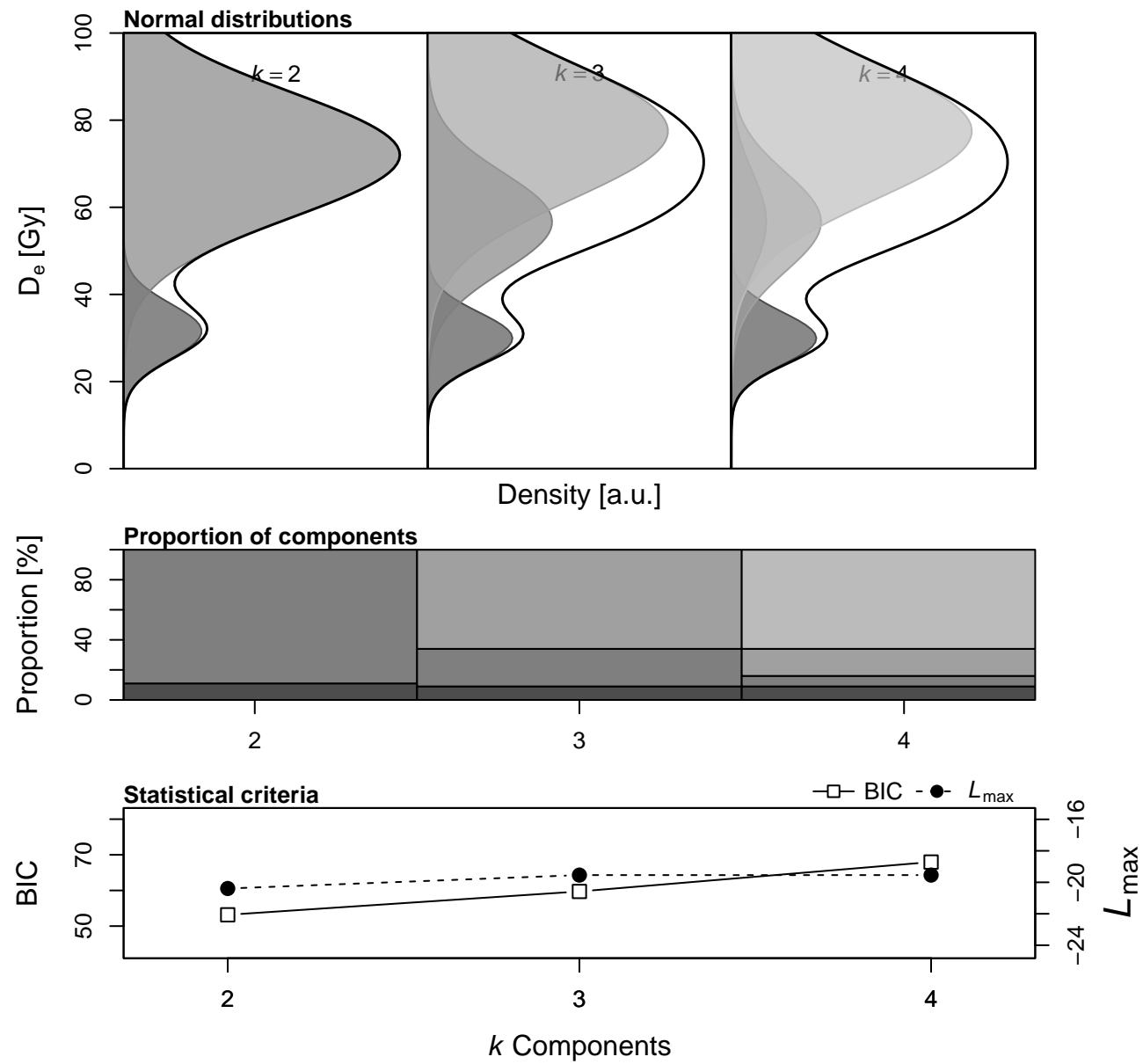
Fast Ratio



help("calc_FastRatio")

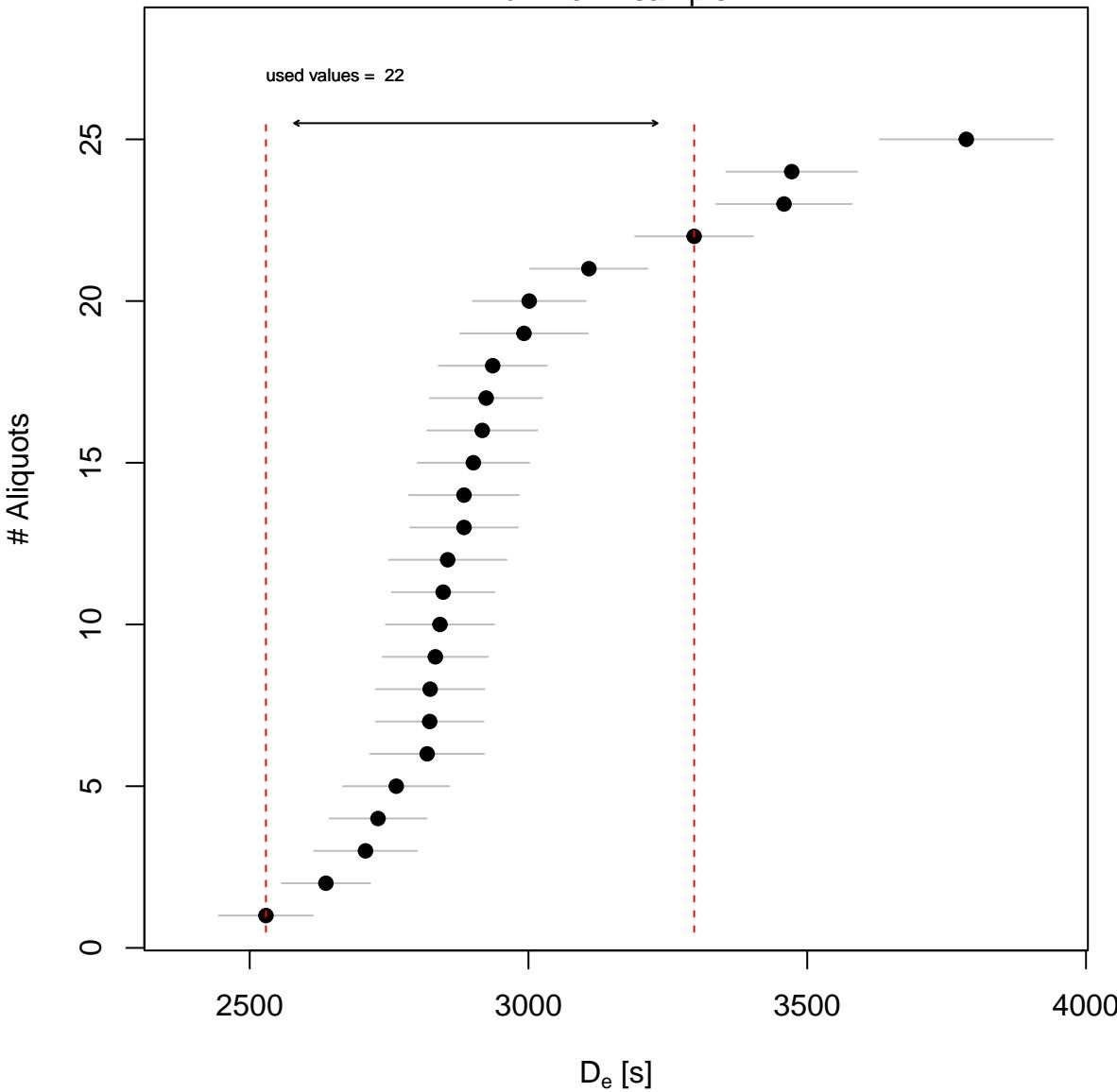
Finite Mixture Model

$\sigma_b = 0.2 \mid n = 62$



Fuchs & Lang (2001)

unknown sample



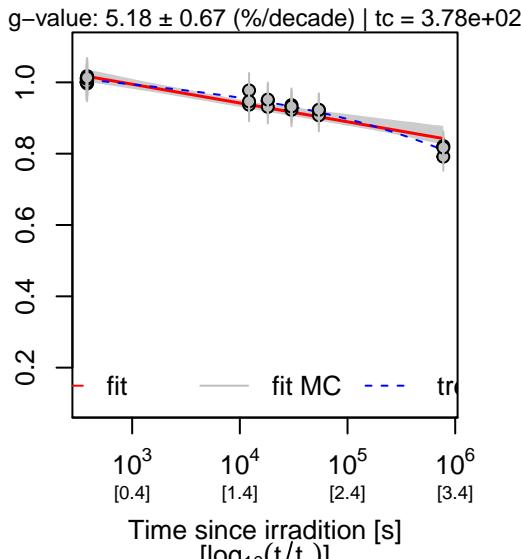
help("calc_FuchsLang2001")

help("calc_Huntley2006")

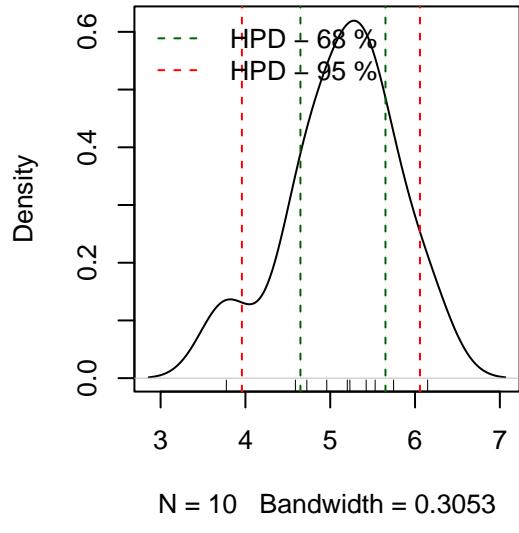
No L_x curves detected

No T_x curves detected

Signal Fading

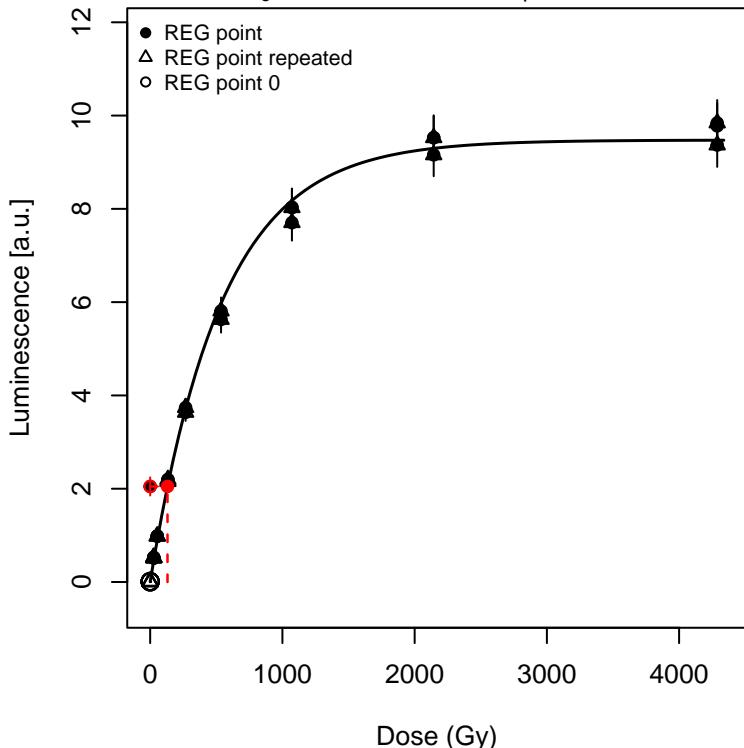


Density: g-values (%/decade)



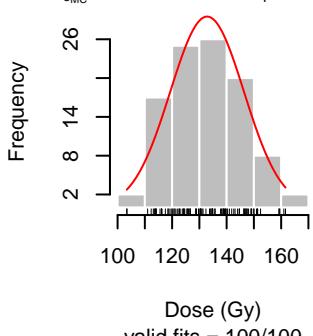
Measured dose response curve

$D_e = 130.97 \pm 1.4e+01$ | fit: EXP



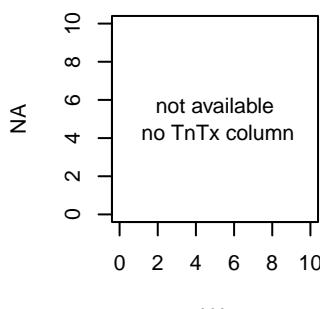
MC runs

$D_{eMC} = 132.84 \pm 1.4e+01$ | diff. = 1.4 %



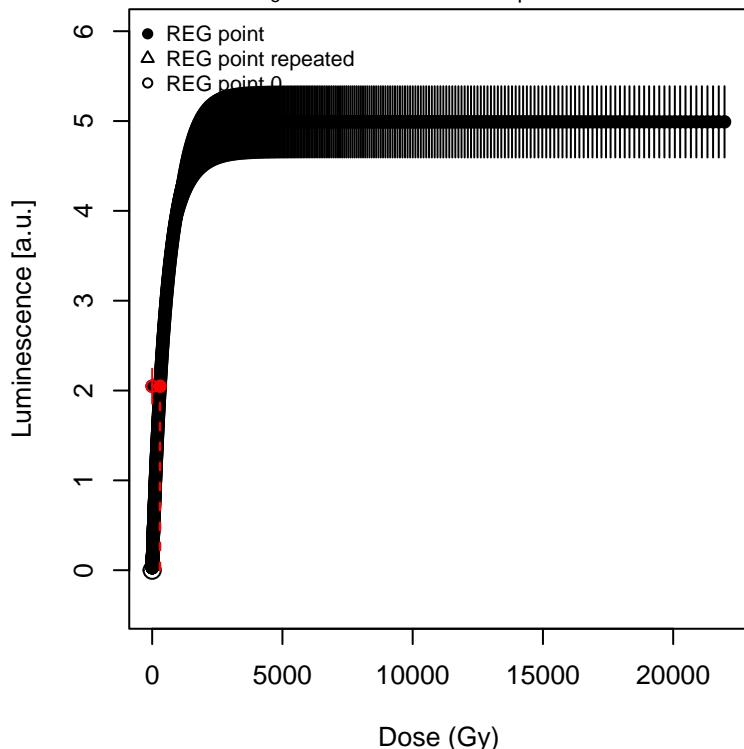
valid fits = 100/100

Test-dose response

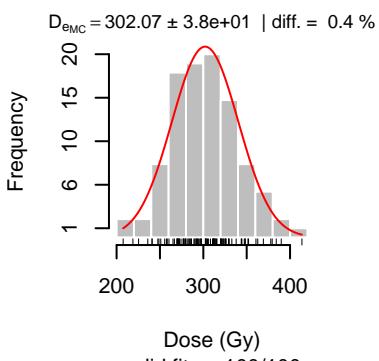


Simulated dose response curve

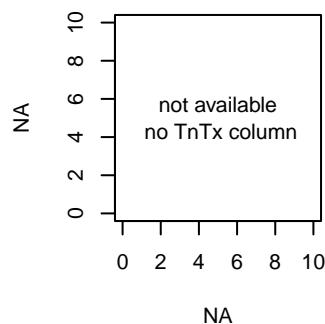
$D_e = 300.9 \pm 3.8e+01$ | fit: EXP



MC runs

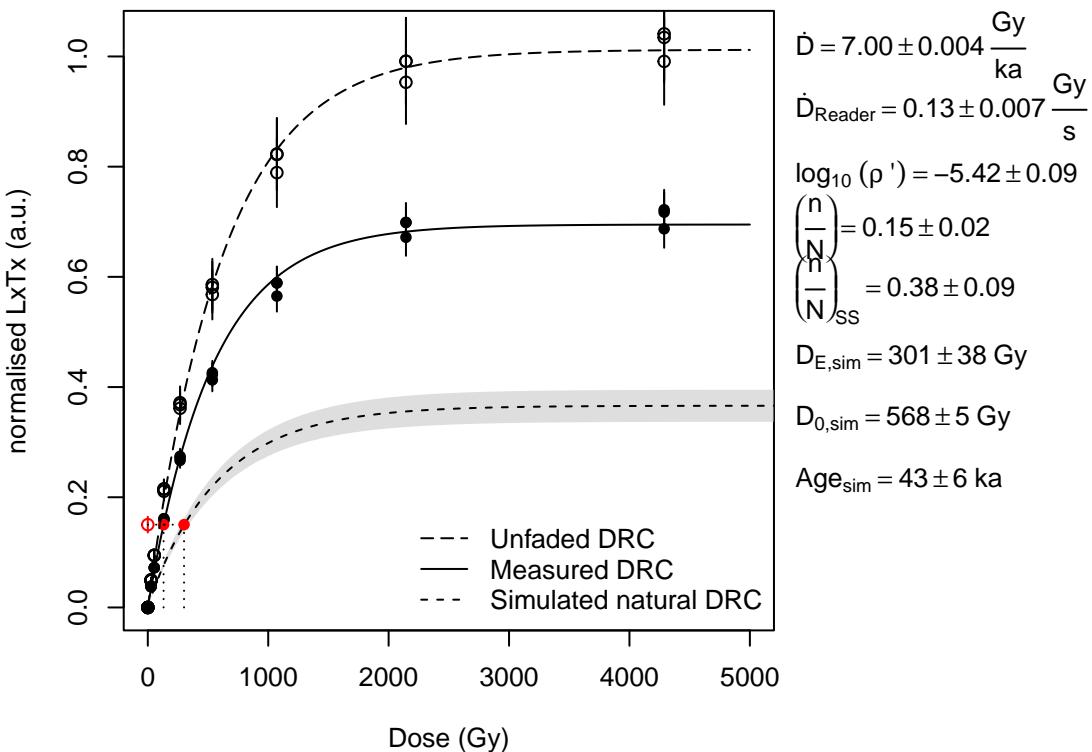


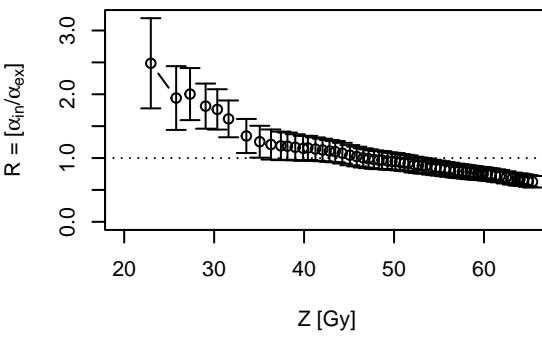
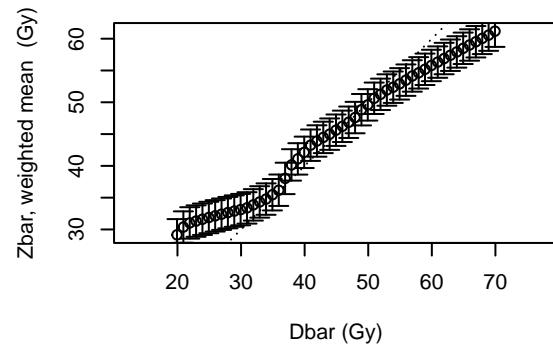
Test-dose response



valid fits = 100/100

Dose response curves





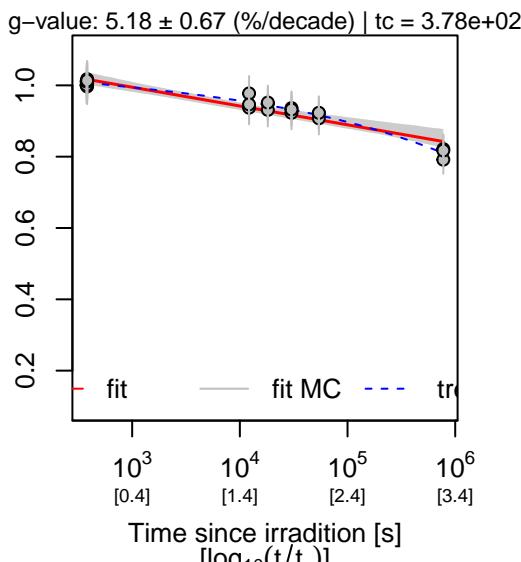
help("calc_IEU")

help("calc_Kars2008")

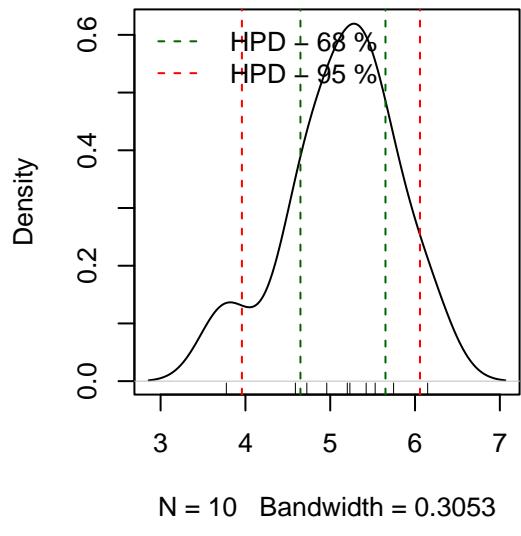
No L_x curves detected

No T_x curves detected

Signal Fading

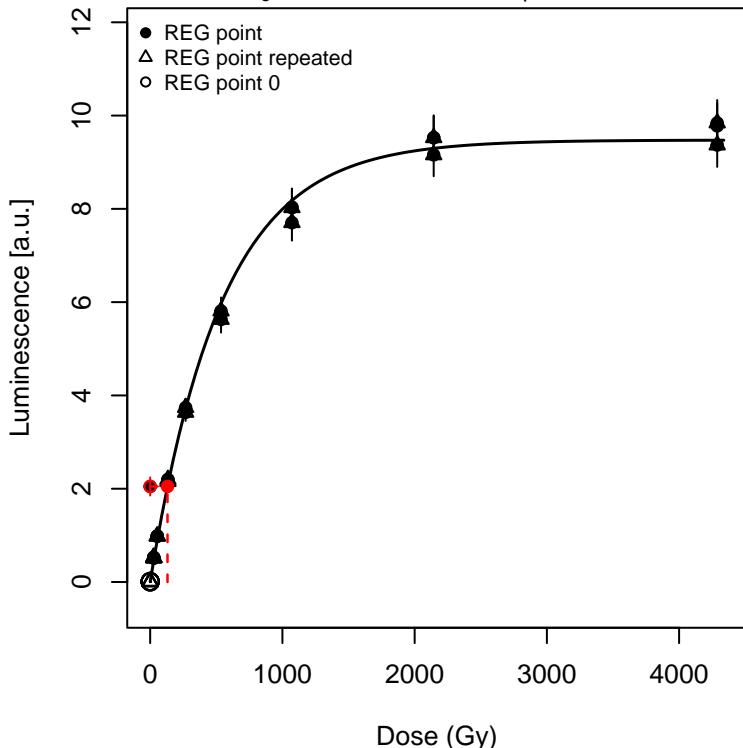


Density: g-values (%/decade)



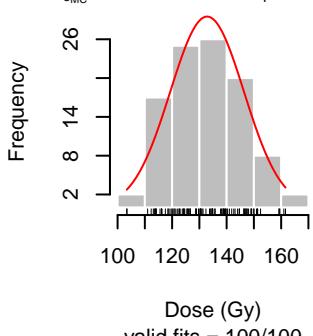
Measured dose response curve

$D_e = 130.97 \pm 1.4e+01$ | fit: EXP



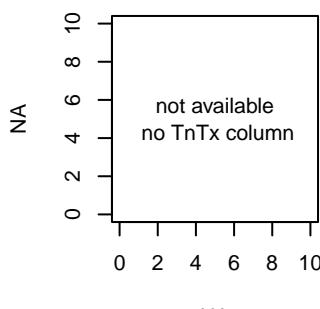
MC runs

$D_{eMC} = 132.84 \pm 1.4e+01$ | diff. = 1.4 %



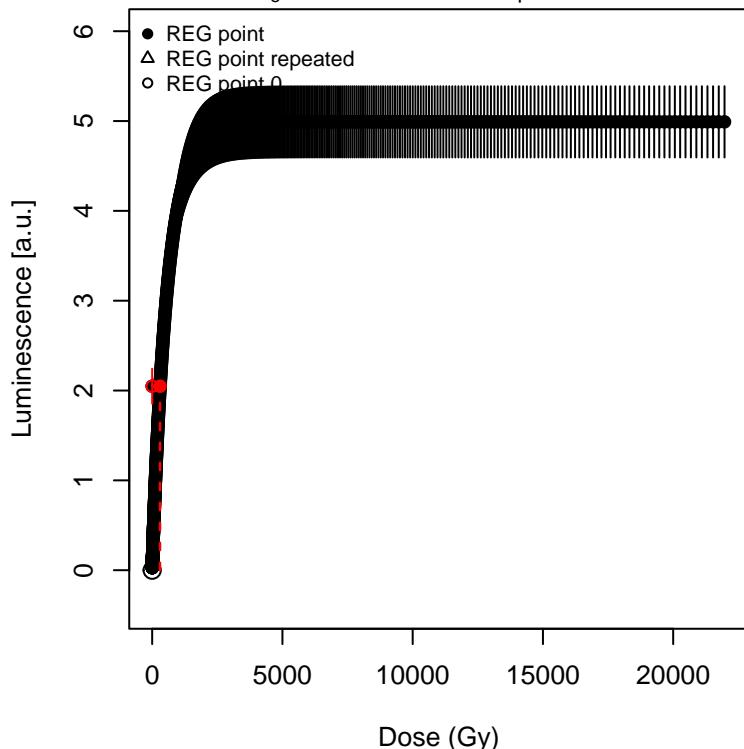
valid fits = 100/100

Test-dose response

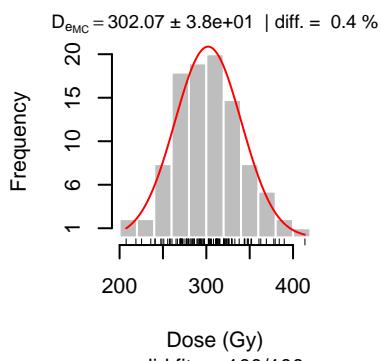


Simulated dose response curve

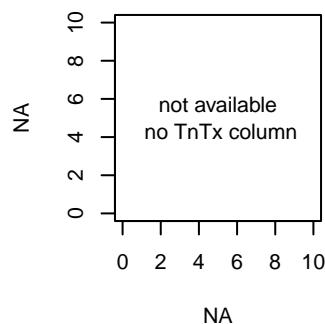
$D_e = 300.9 \pm 3.8e+01$ | fit: EXP



MC runs

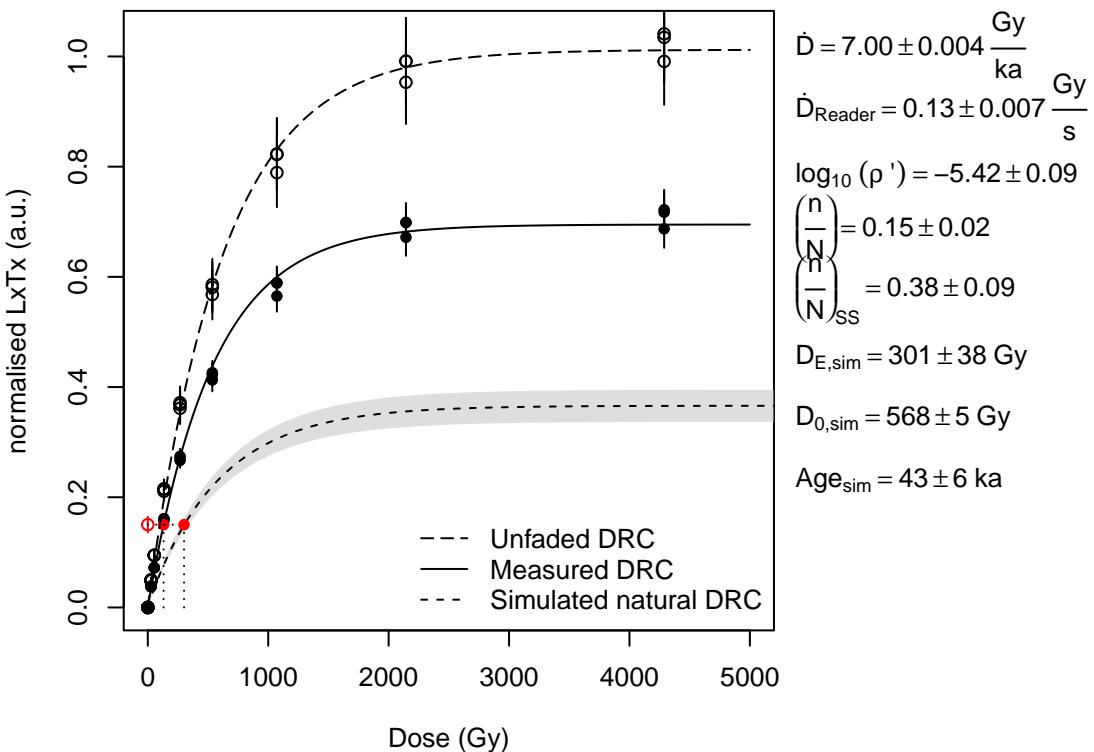


Test-dose response

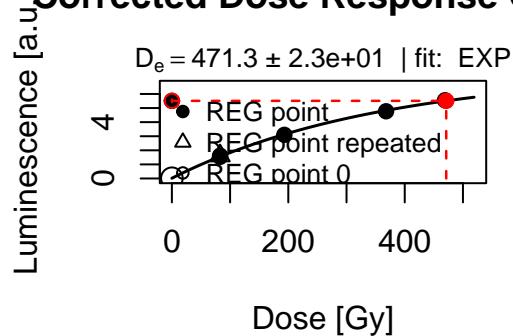


valid fits = 100/100

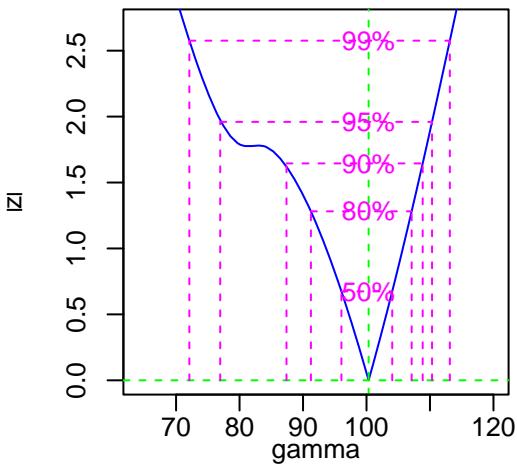
Dose response curves



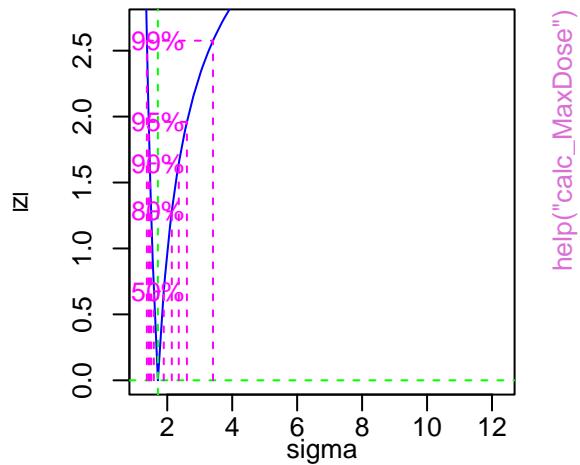
Corrected Dose Response Curve



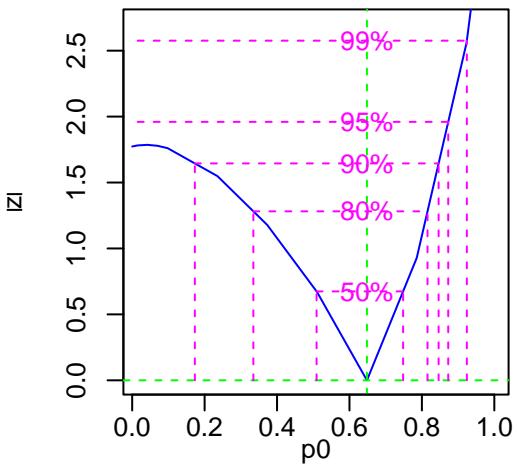
Likelihood profile: gamma



Likelihood profile: sigma

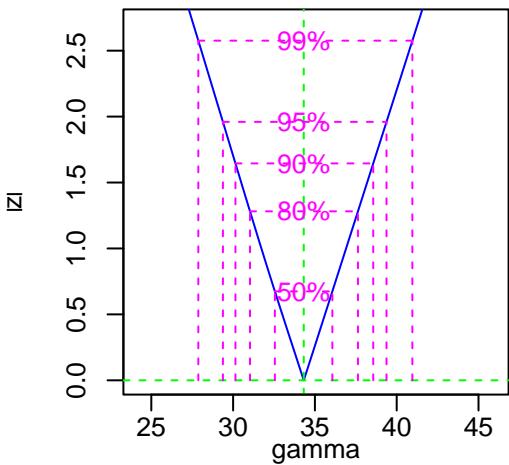


Likelihood profile: p0

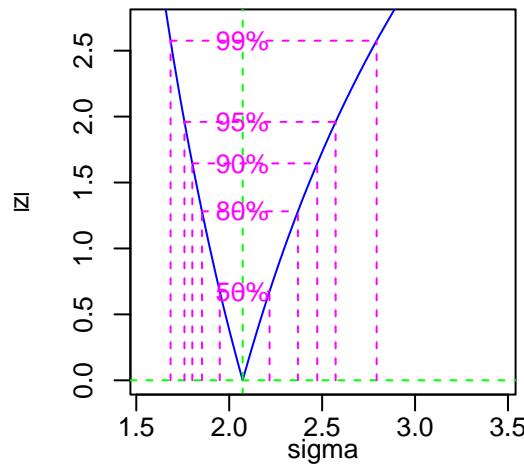


```
help("calc_MaxDose")
```

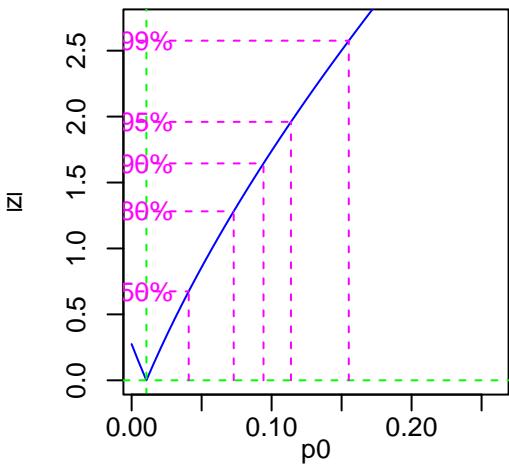
Likelihood profile: gamma



Likelihood profile: sigma



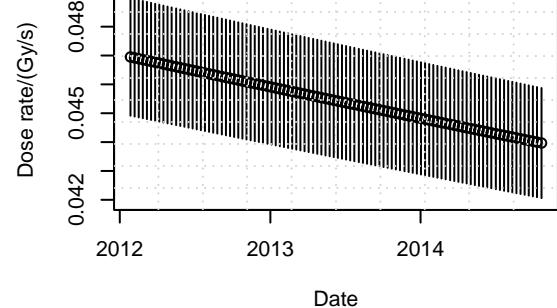
Likelihood profile: p0



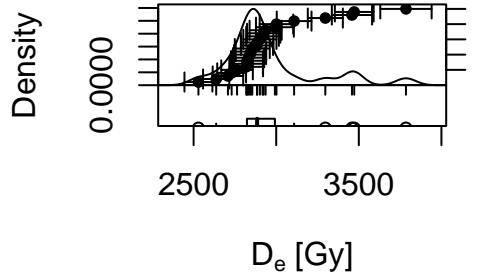
help("calc_MinDose")

Source Dose Rate Prediction

source type: Sr-90 | half-life: 28.9 a

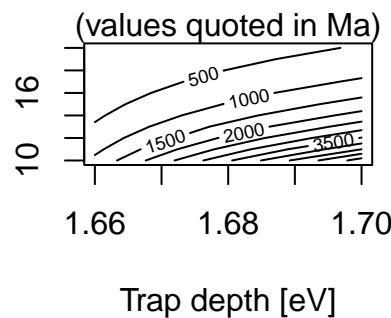


D_e distribution



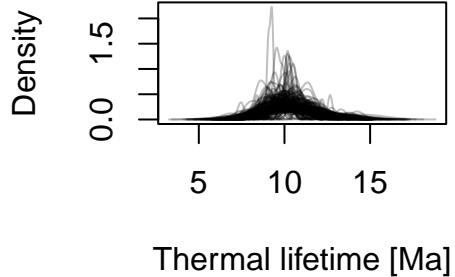
Cumulative frequency

Thermal Lifetime Contour Plot

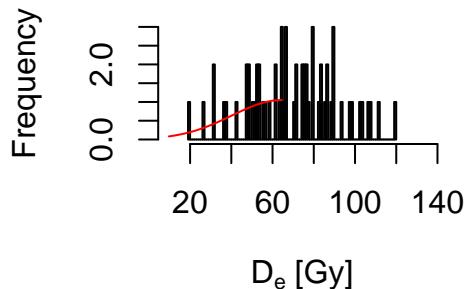


help("calc_ThermalLifetime")

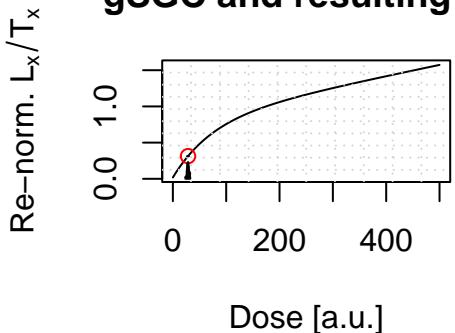
Thermal Lifetime Density Plot



D_e applying Woda and Fuchs (2008)



gSGC and resulting D_e



Standardised estimate

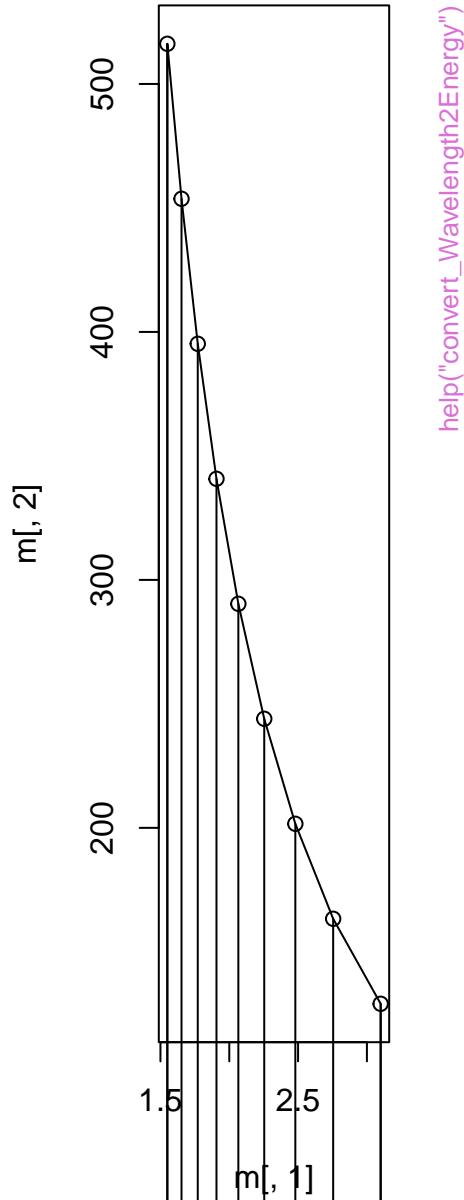
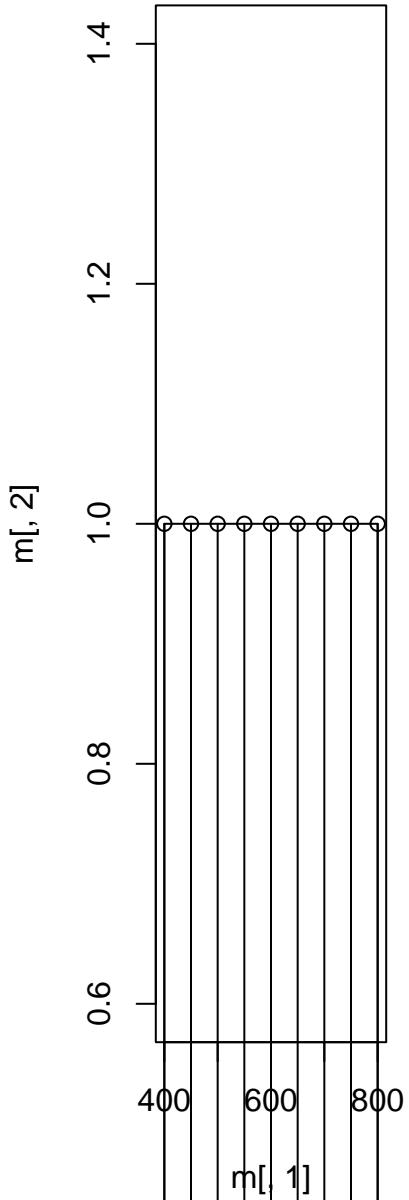
D_e distribution

$n = 10 \mid \text{in } 2 \text{ sigma} = 100 \%$

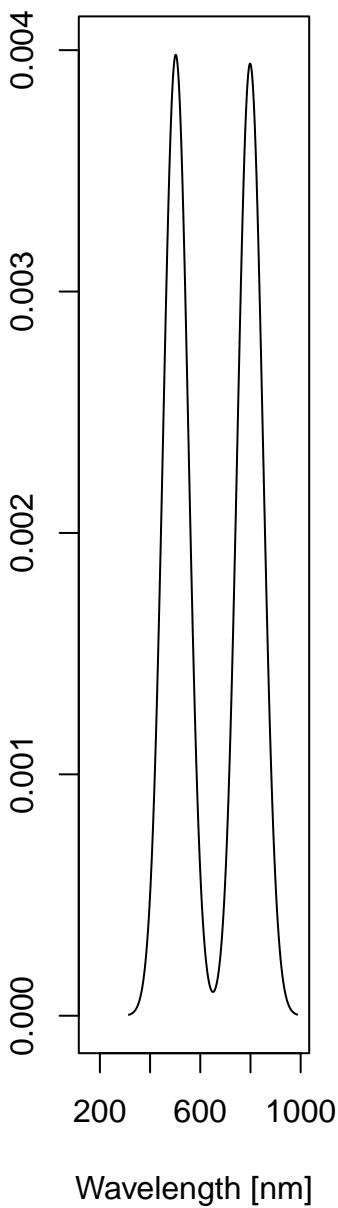


D_e [Gy]

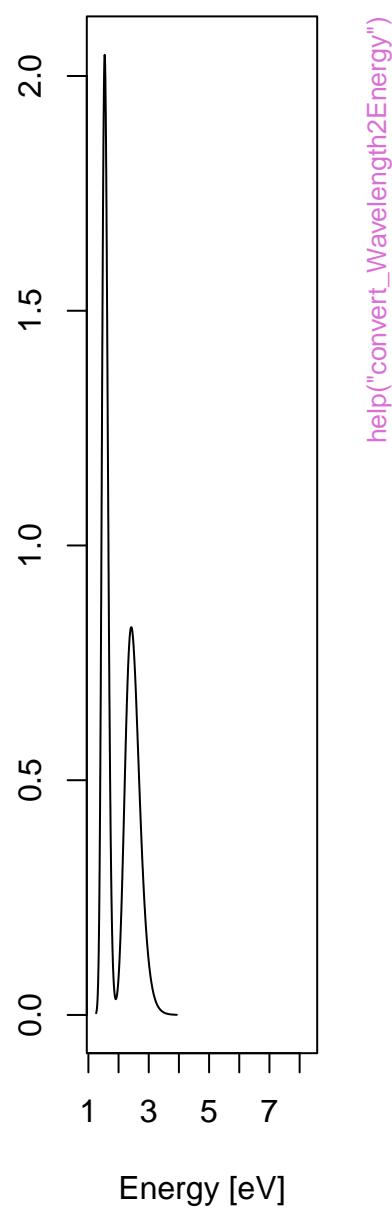
Predensity (bw 0.014)



Luminescence [a.u.]

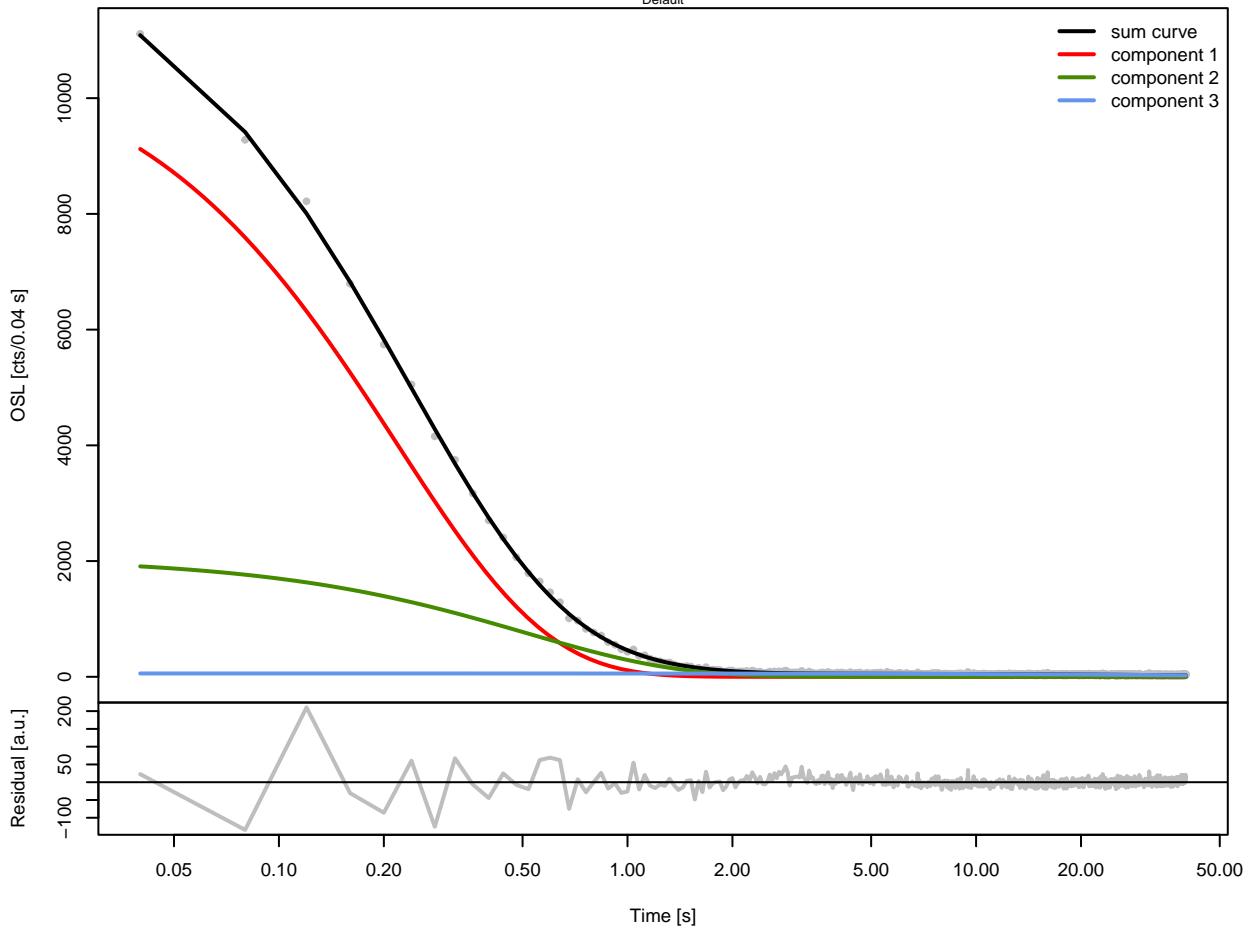


Luminescence [a.u.]

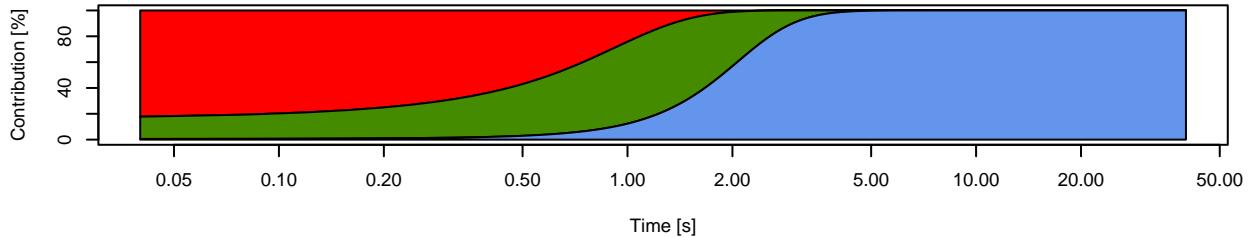


CW Curve Fit

Default

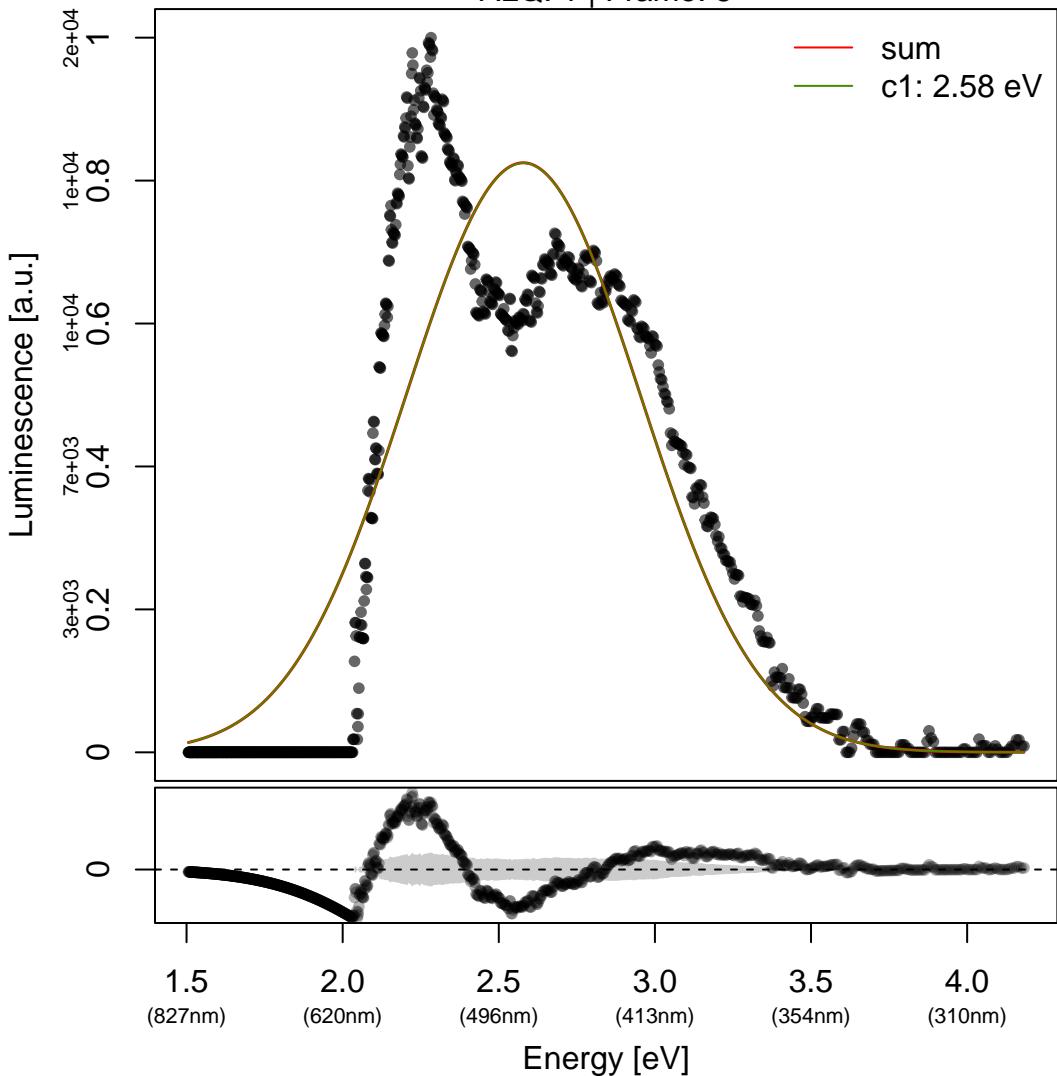


Component contribution to sum curve



Emission Spectrum Deconvolution

ALQ: 1 | Frame: 5

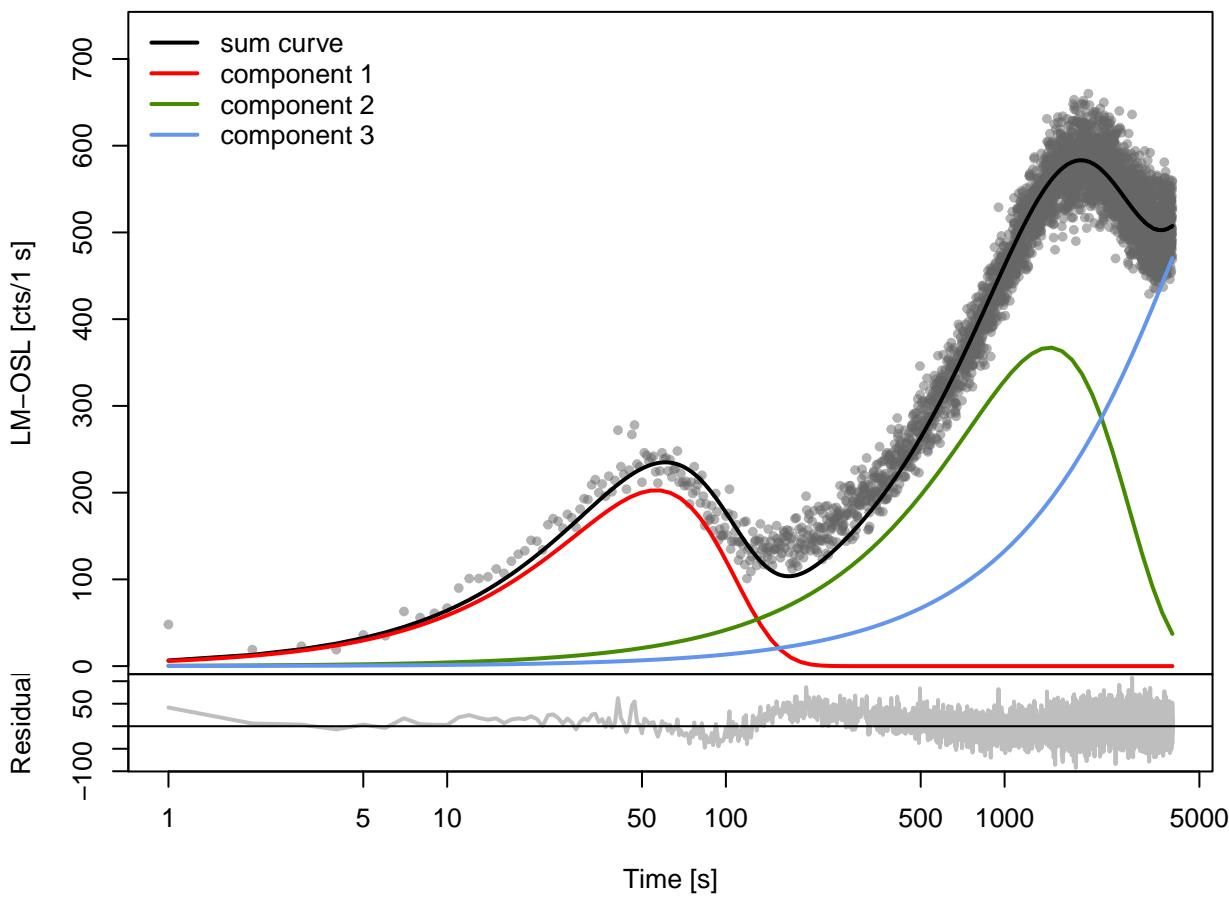


help("fit_EmissionSpectra")

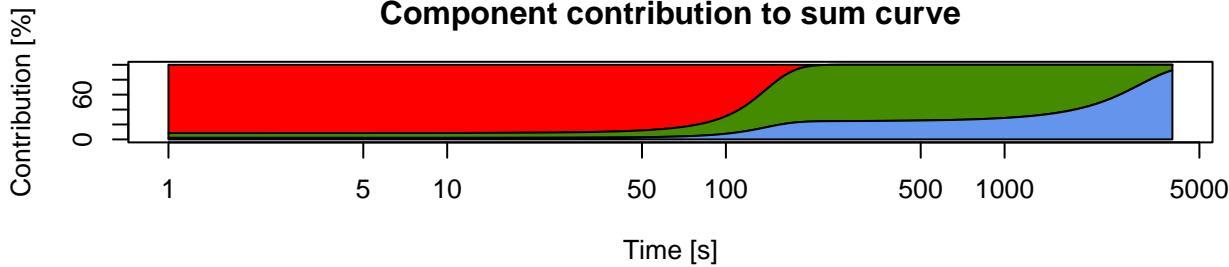
help("fit_EmissionSpectra")

help("fit_EmissionSpectra")

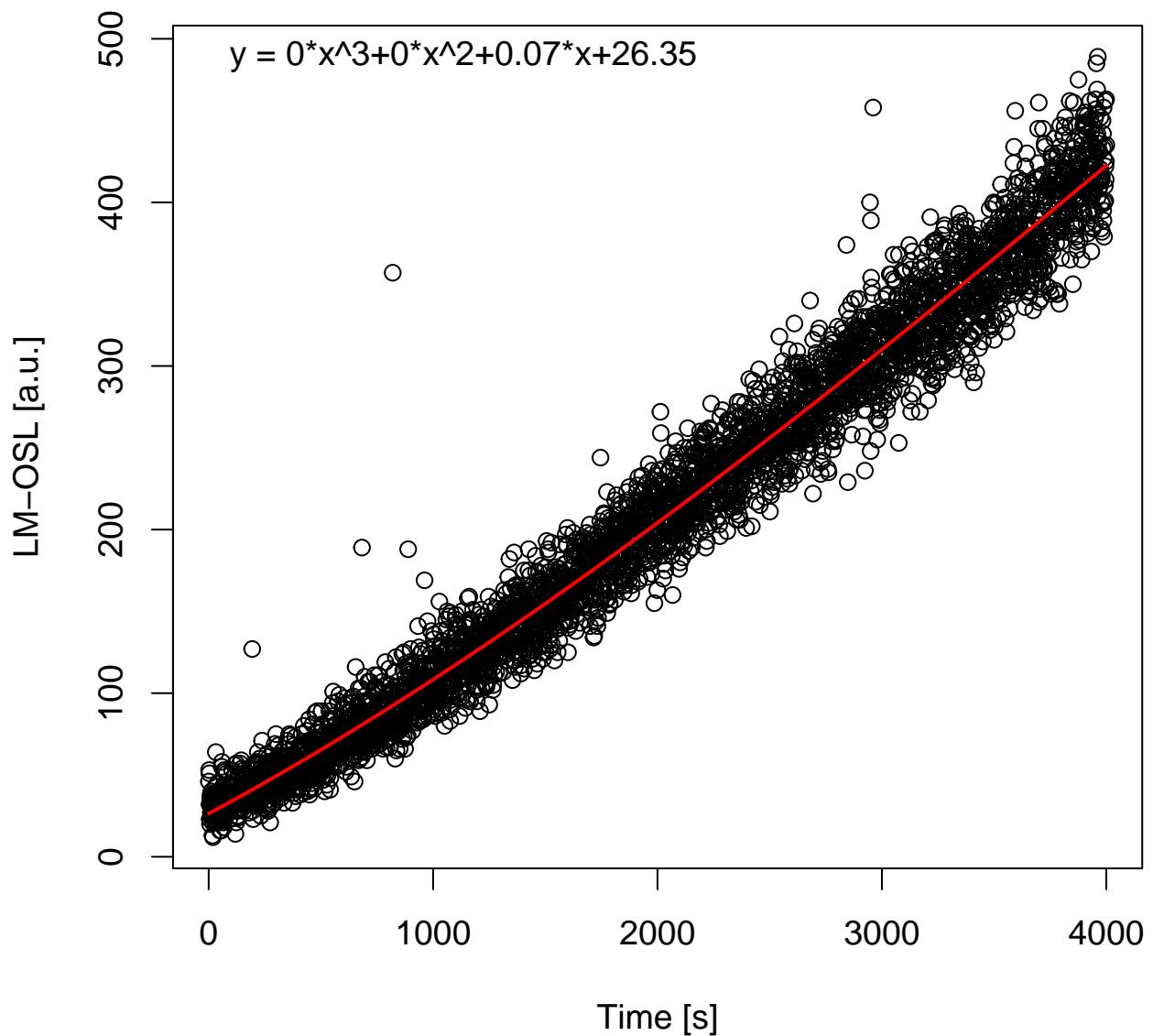
Default



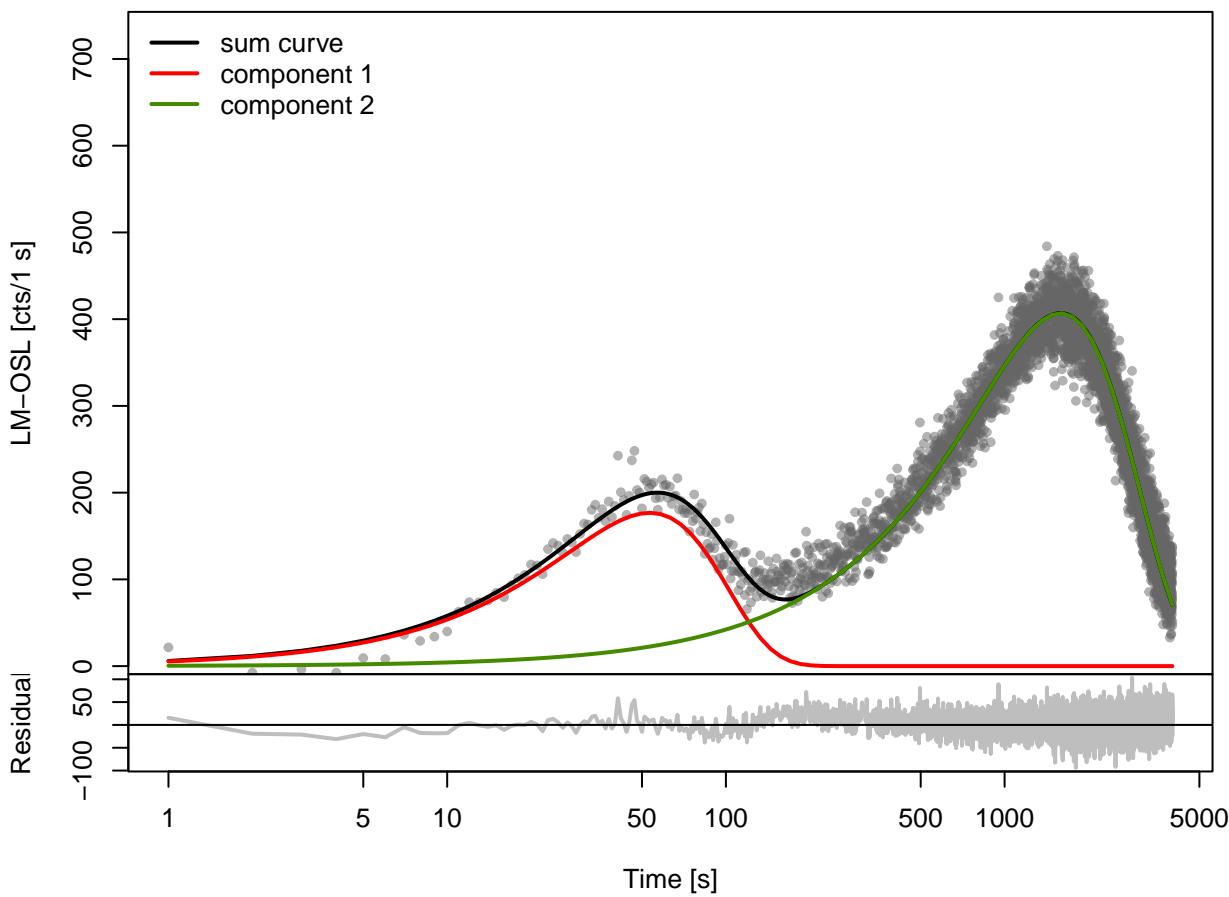
Component contribution to sum curve



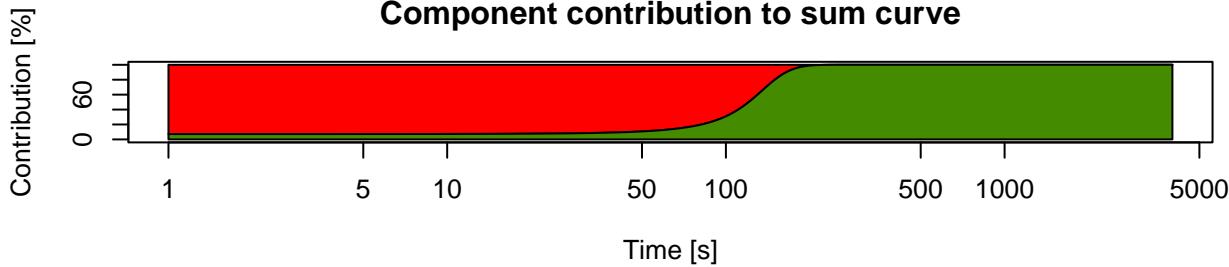
Background



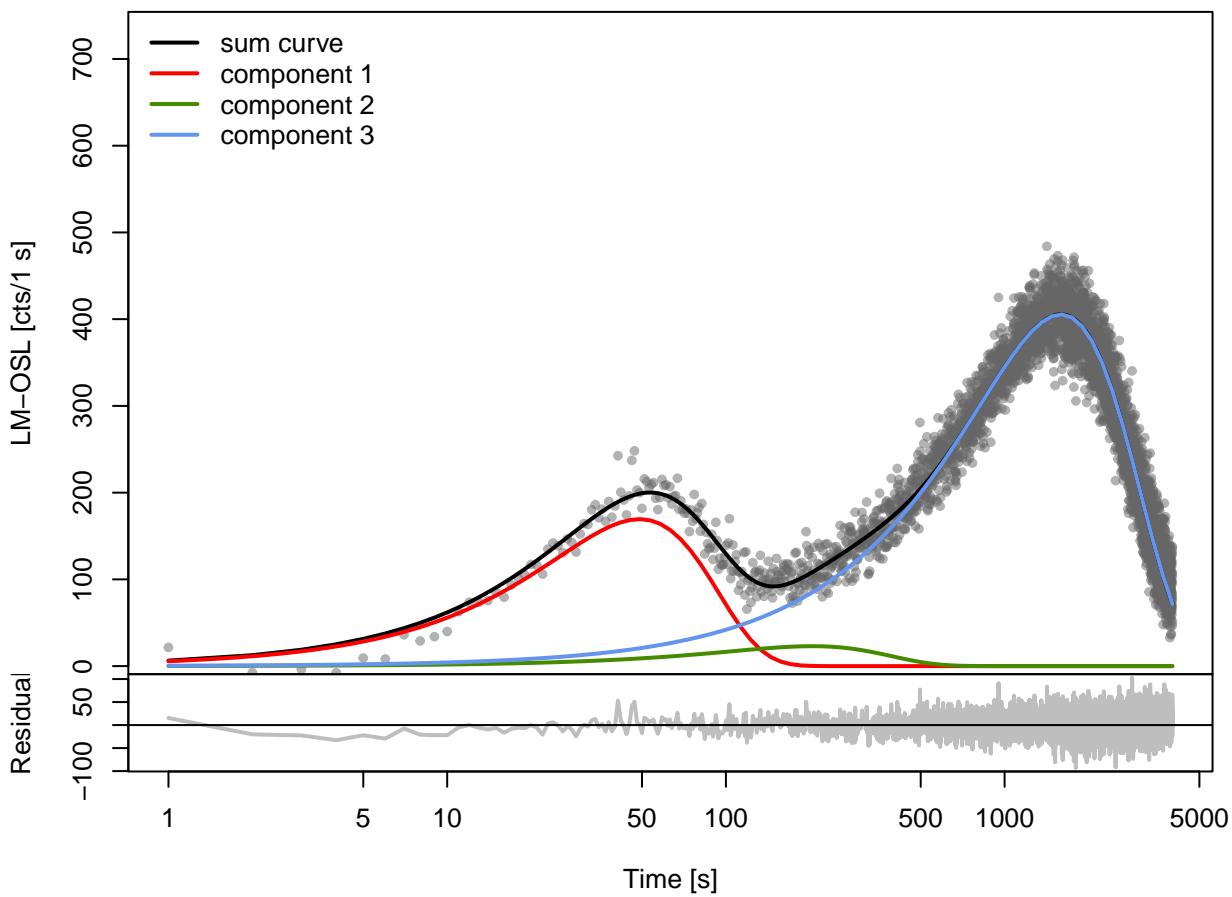
Default



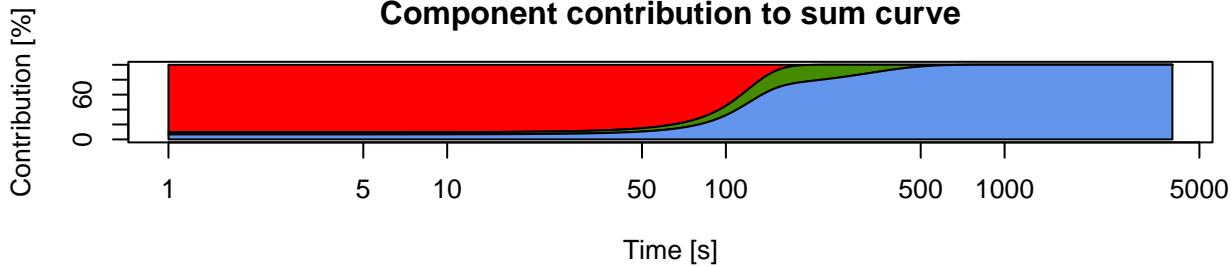
Component contribution to sum curve



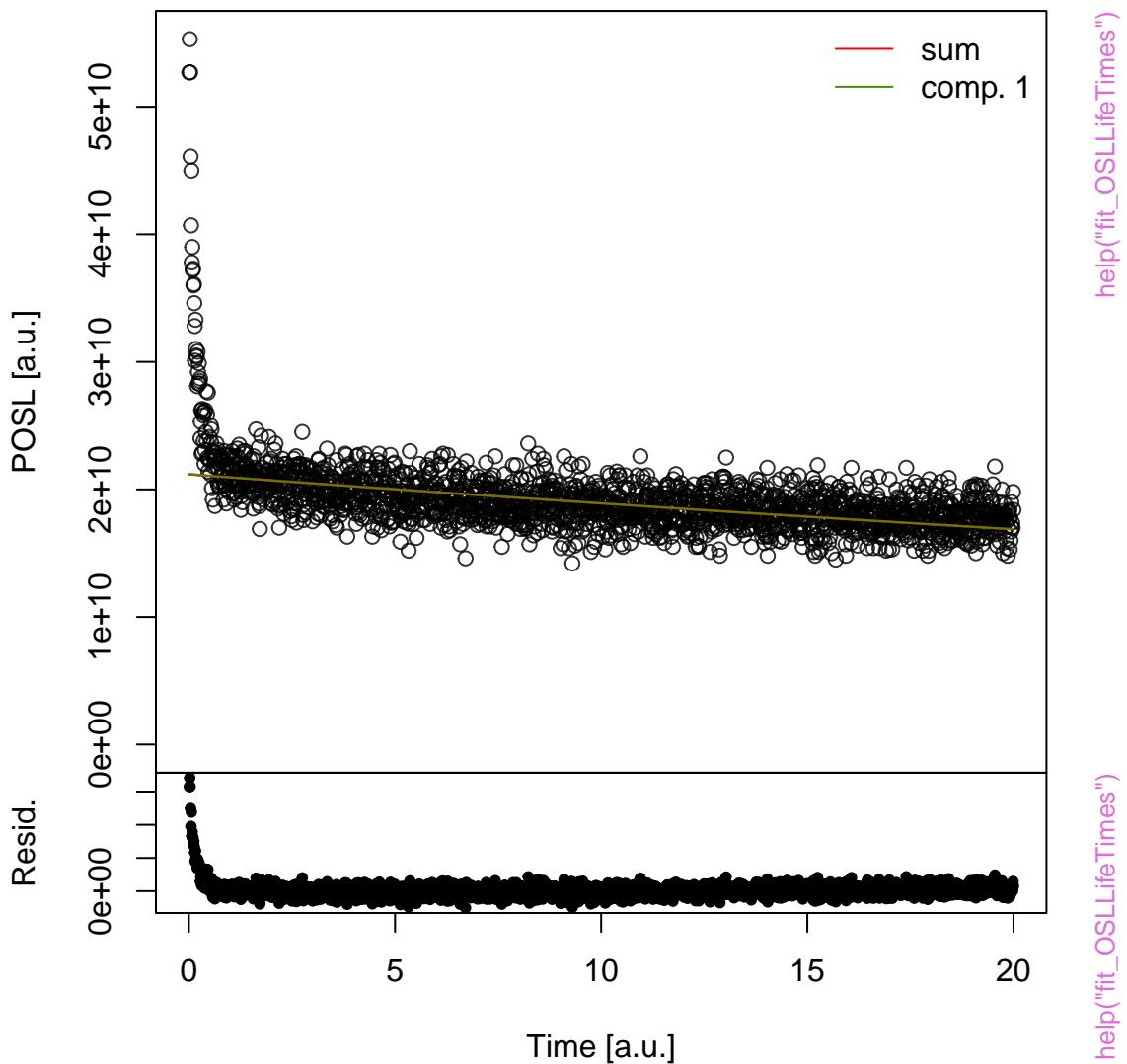
Default



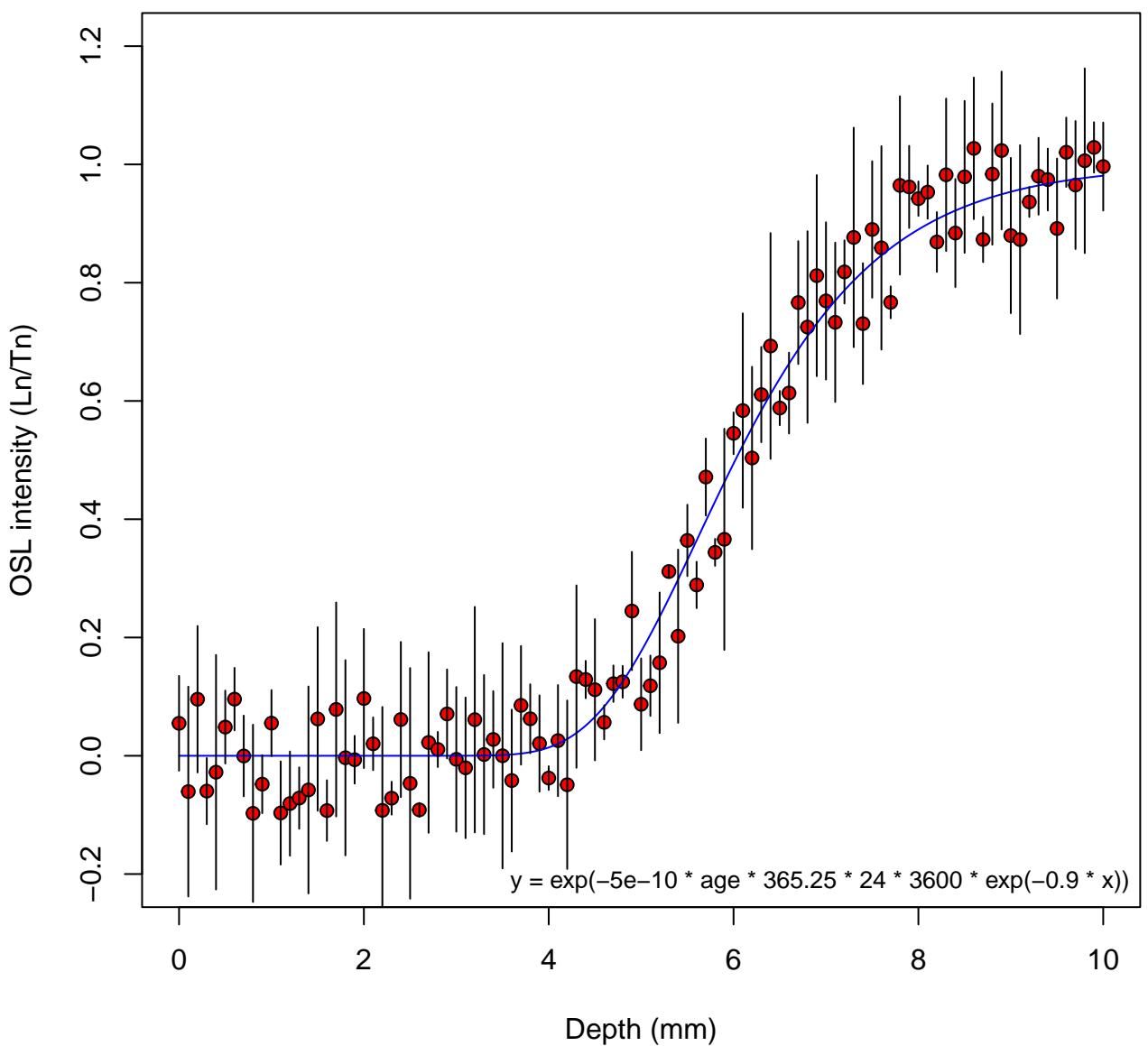
Component contribution to sum curve

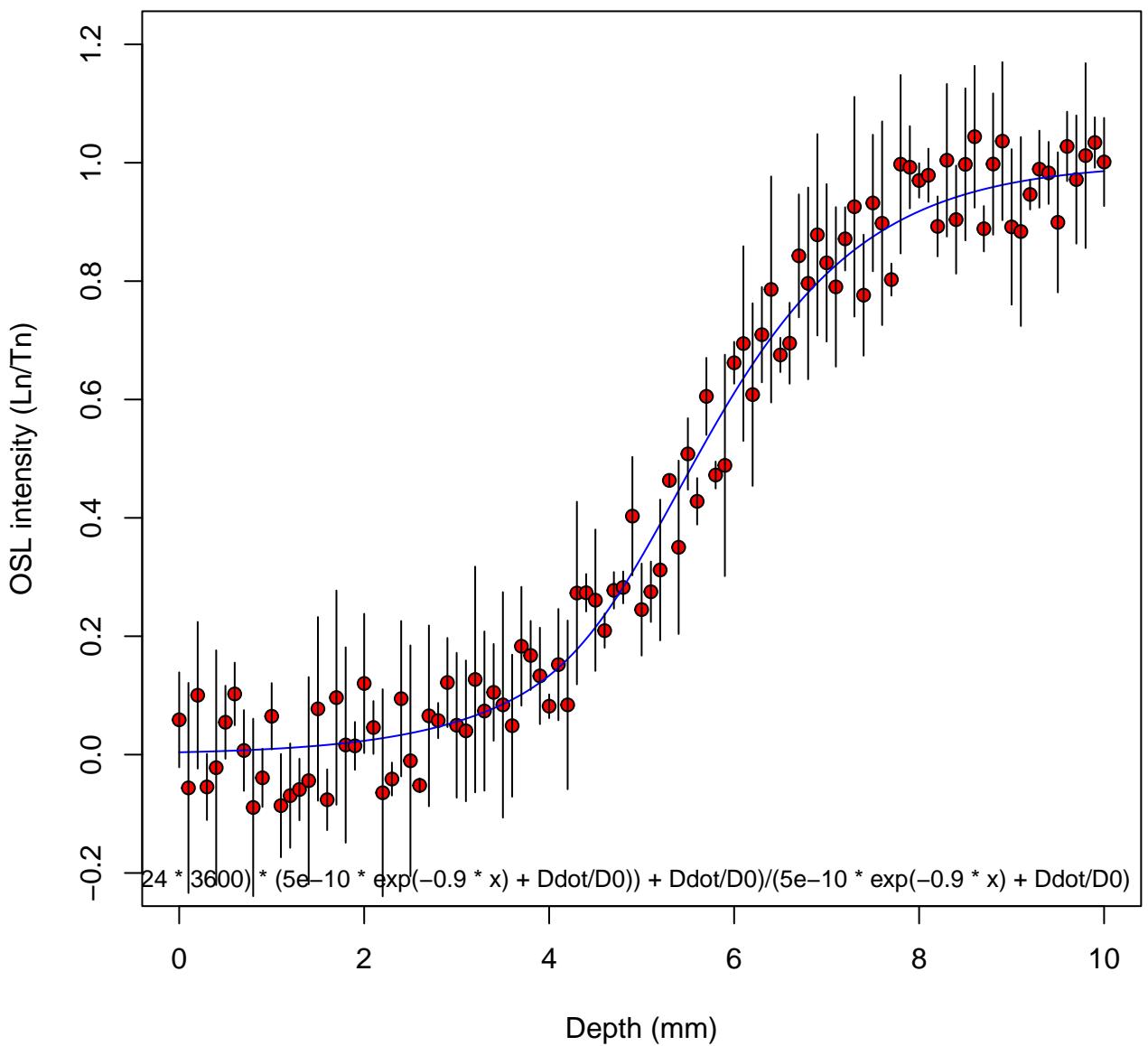


OSL Lifetimes

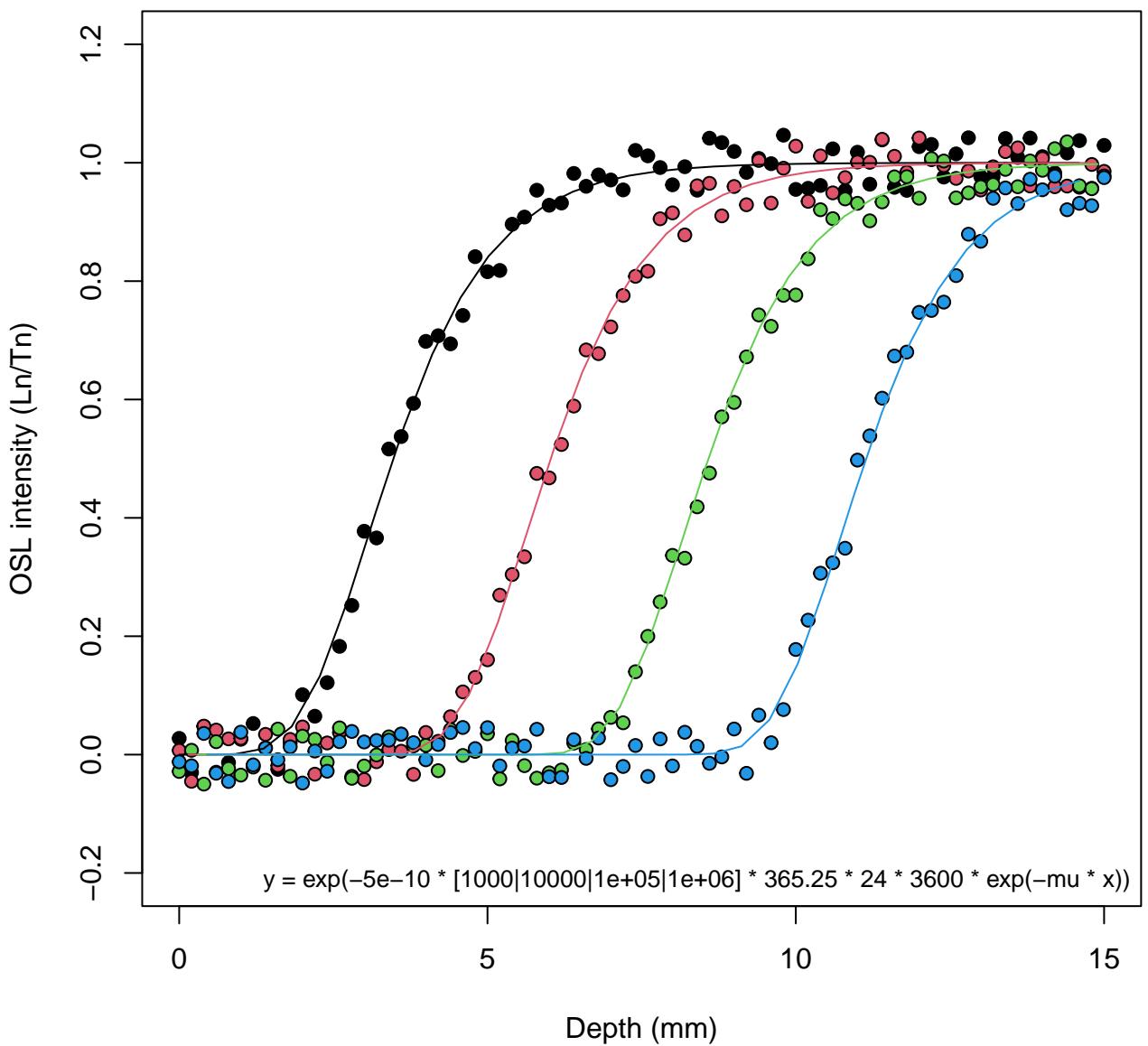


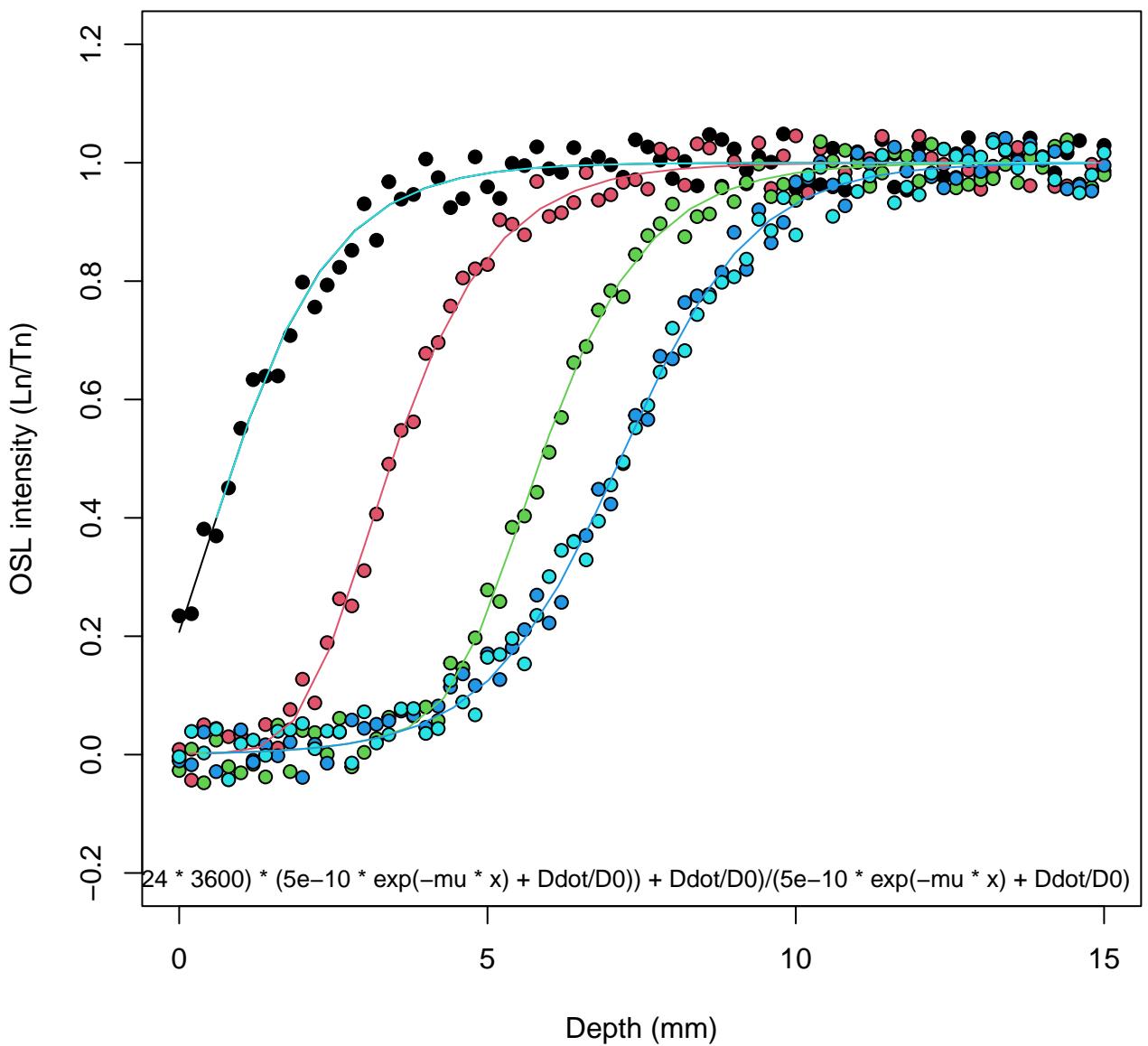
help("fit_SurfaceExposure")





help("fit_SurfaceExposure")

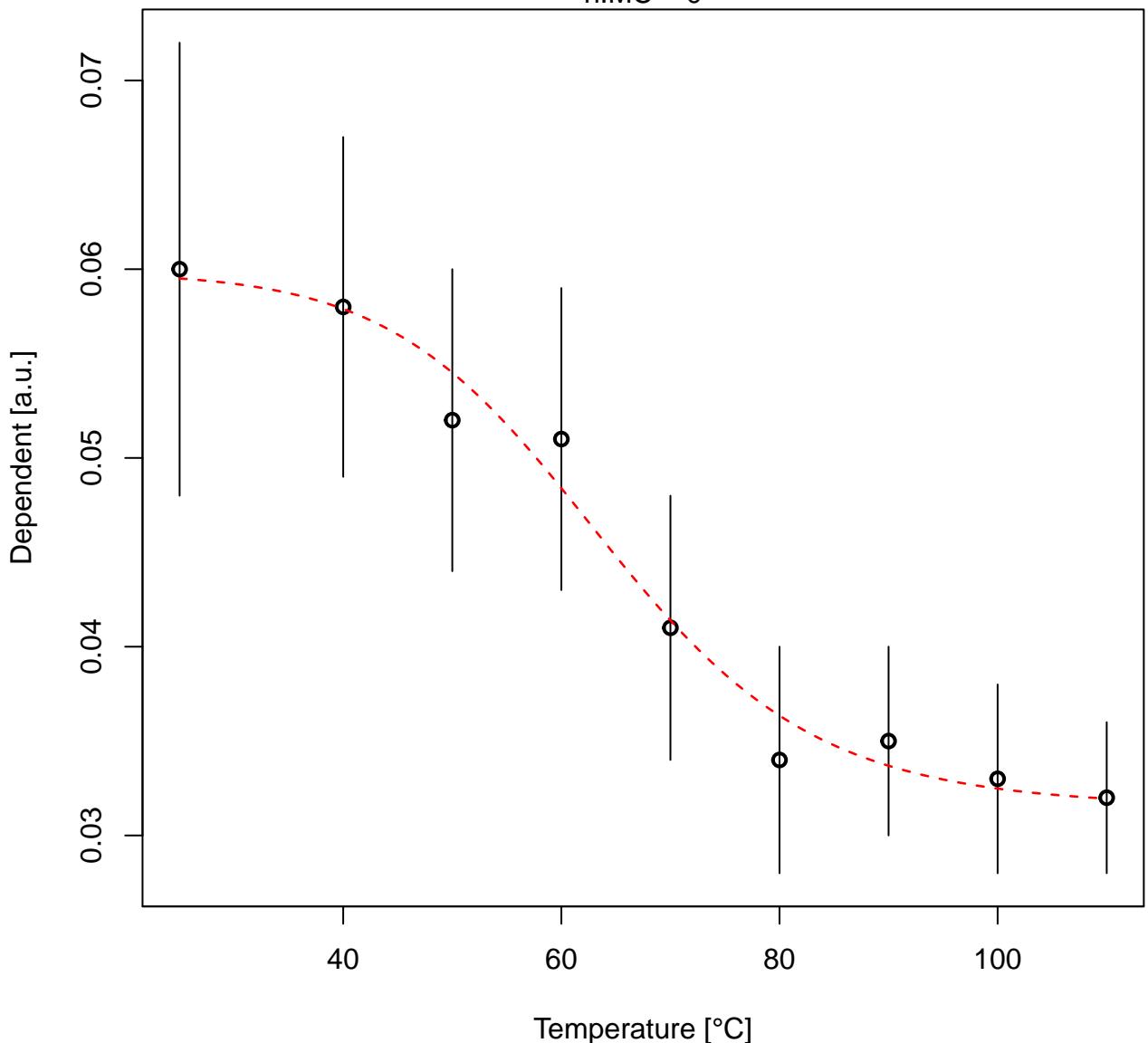




help("fit_SurfaceExposure")

Thermal quenching

n.MC = 0



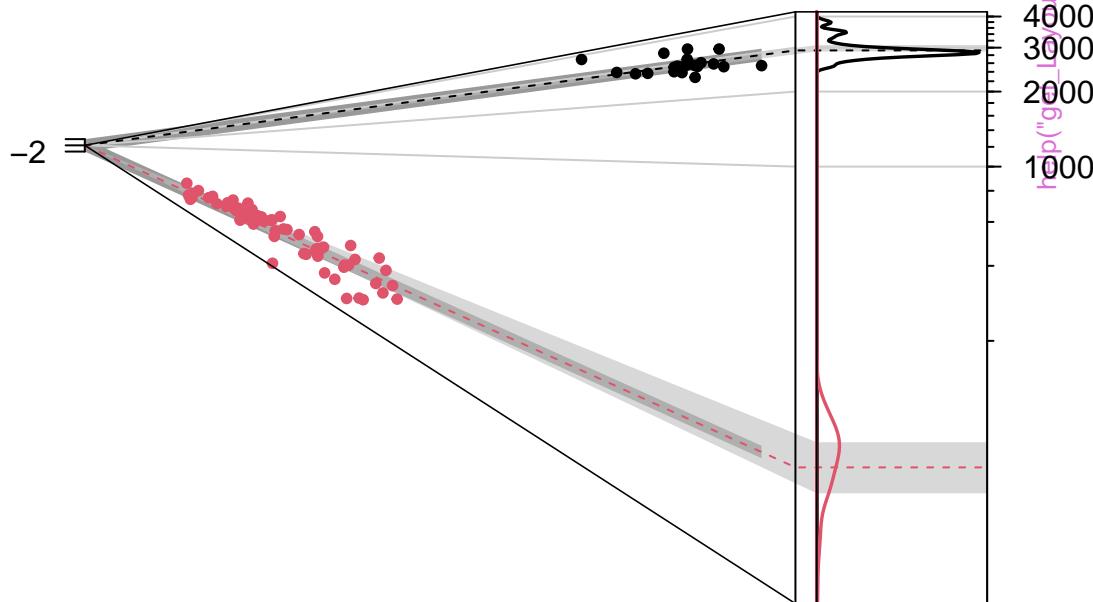
help("fit_ThermalQuenching")

D_e distribution

n = 25 | in 2 sigma = 68 %

n = 62 | in 2 sigma = 41.9 %

Standardised estimate



D_e [Gy]

help("get_Layout")

Relative standard error (%)

10

5

3.3

0

10

20

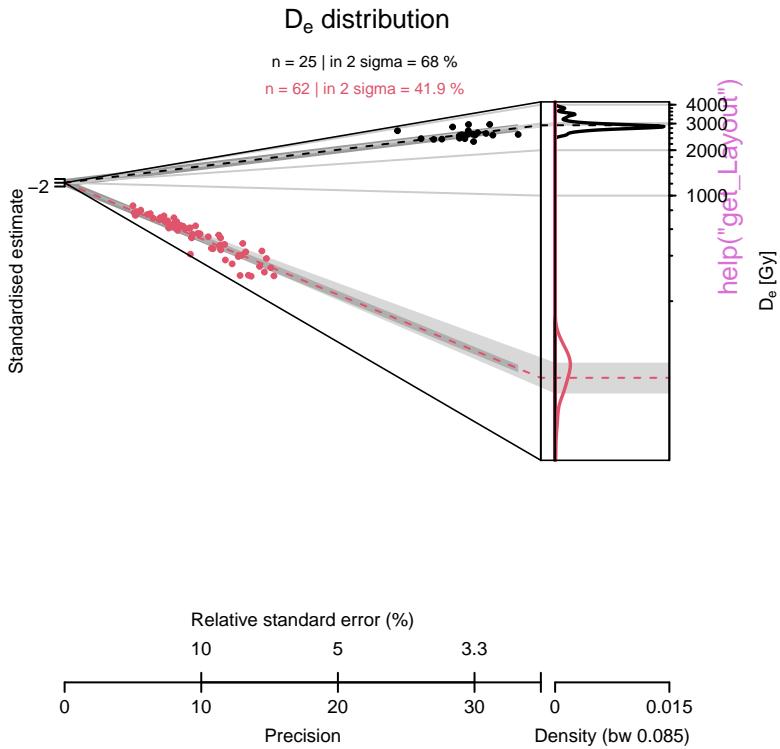
30

0 0.015

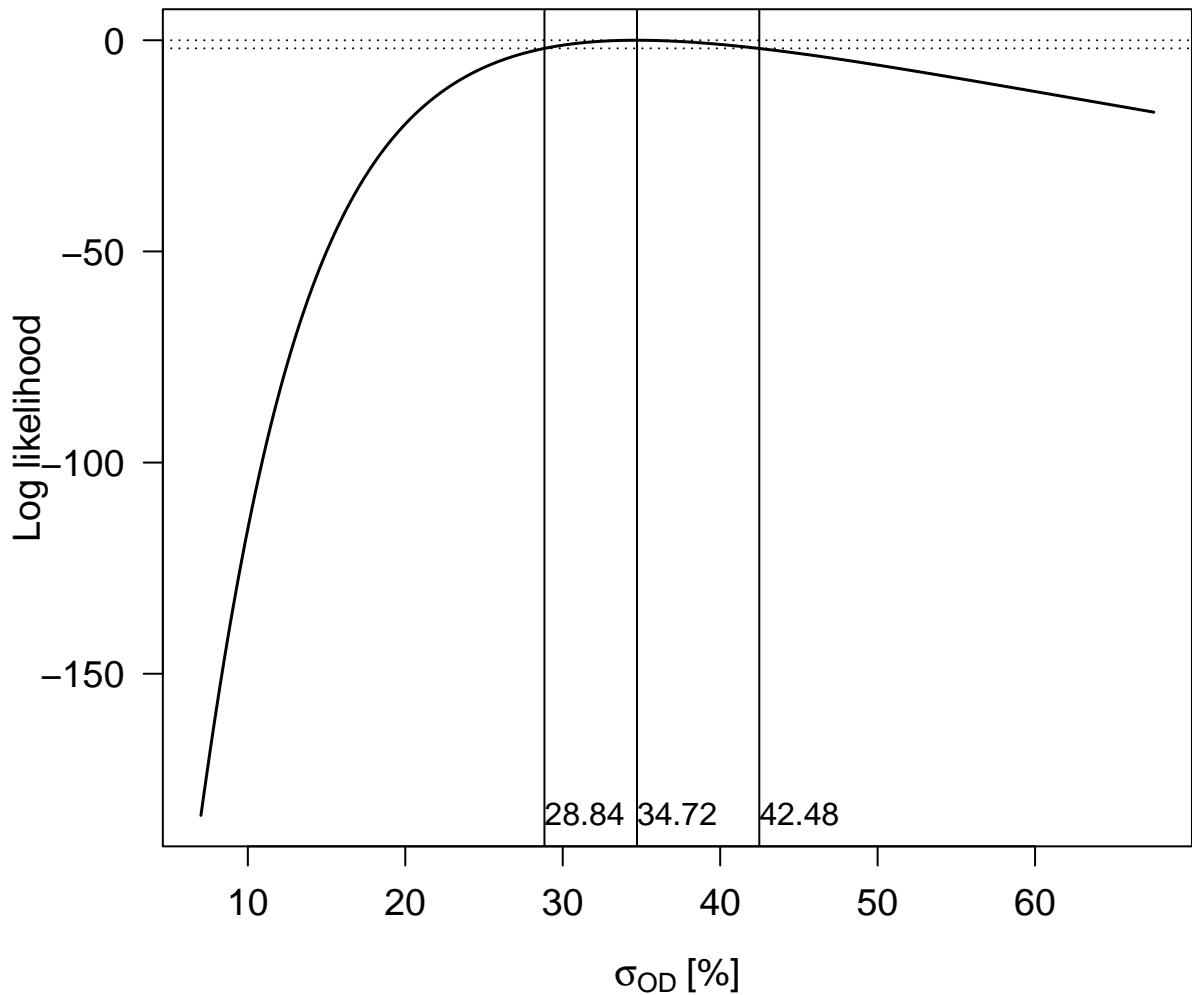
Precision

Density (bw 0.085)

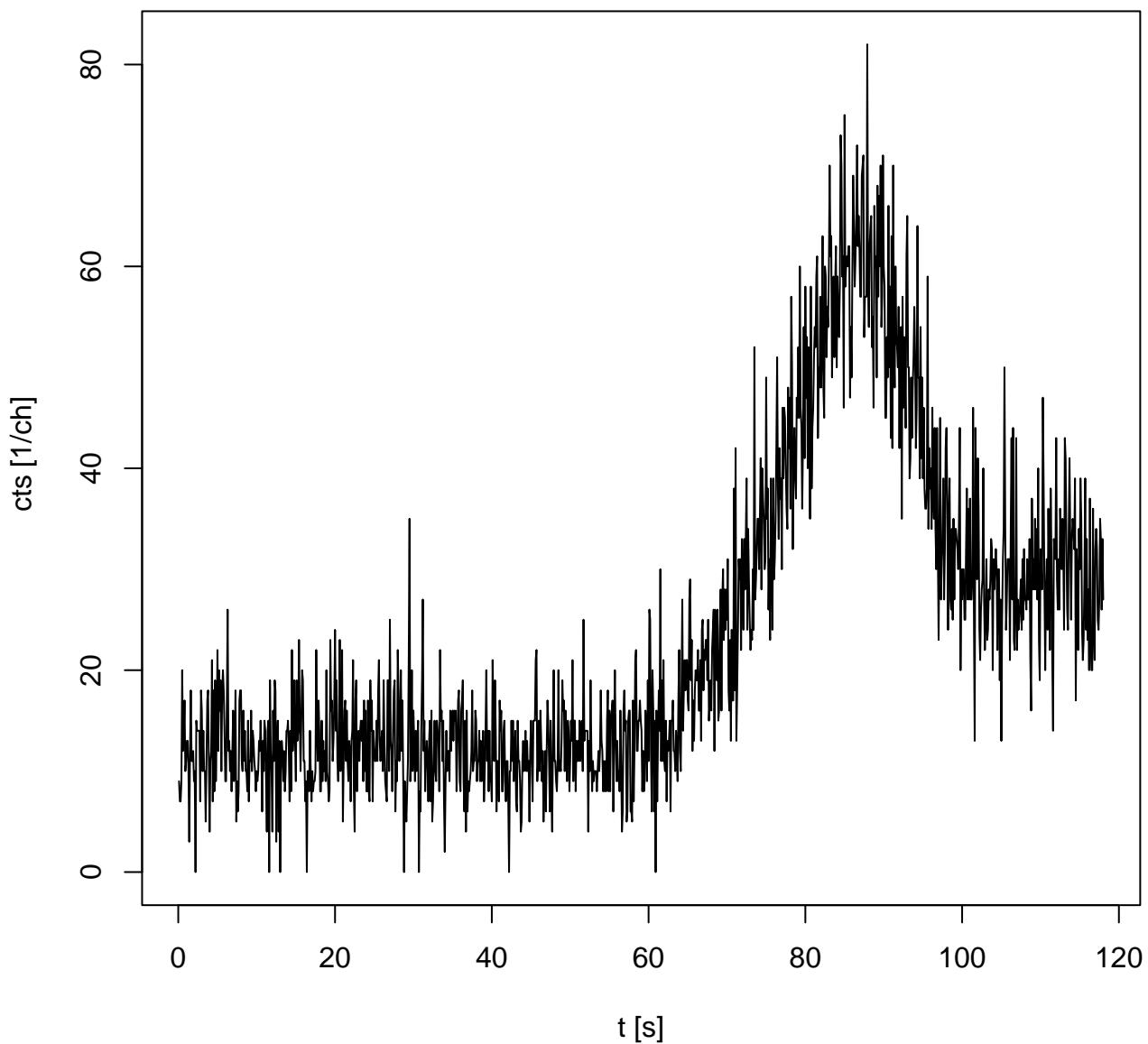
help("get_Layout")



Profile log likelihood for σ_{OD}

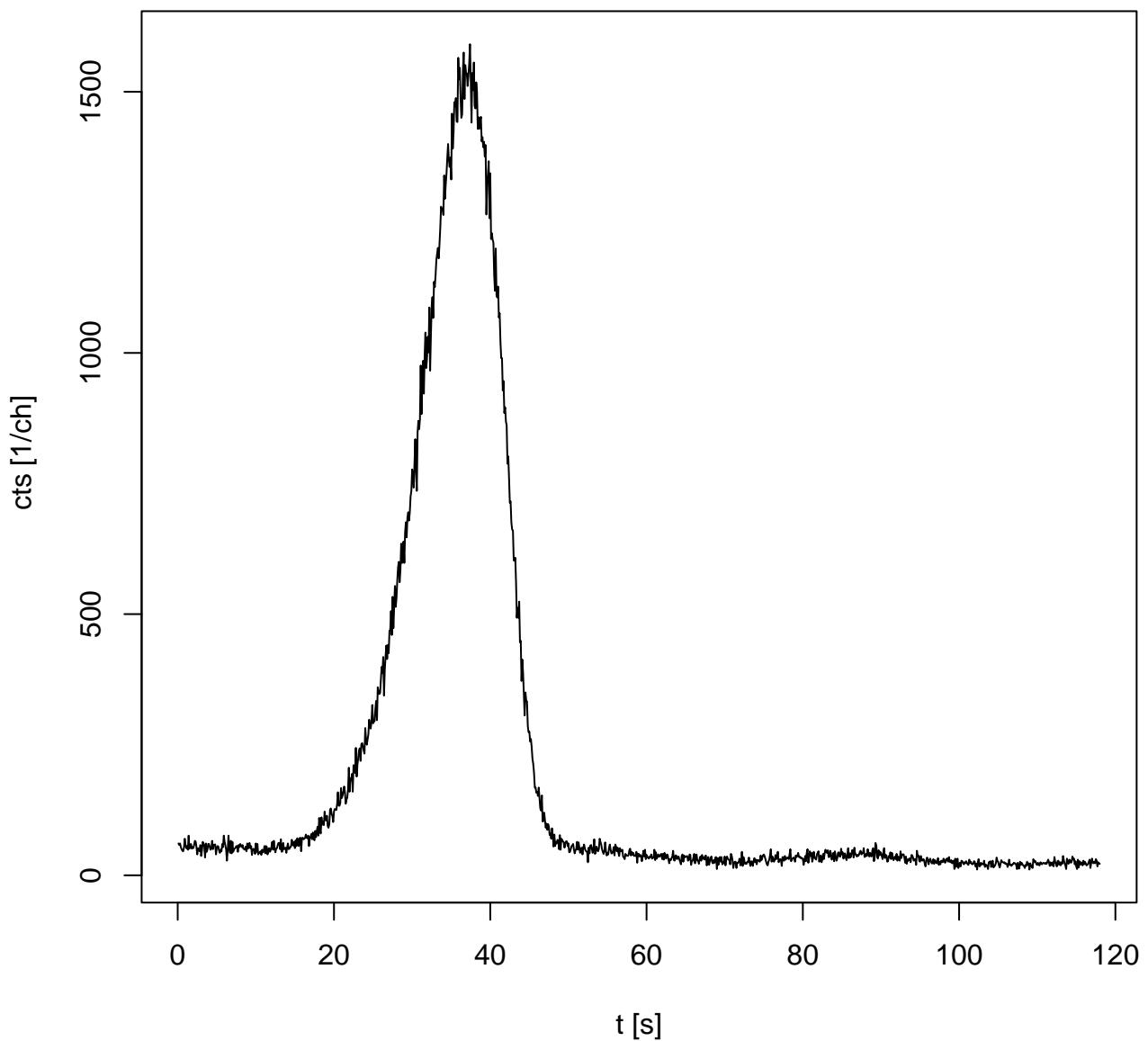


TL (UVVIS)



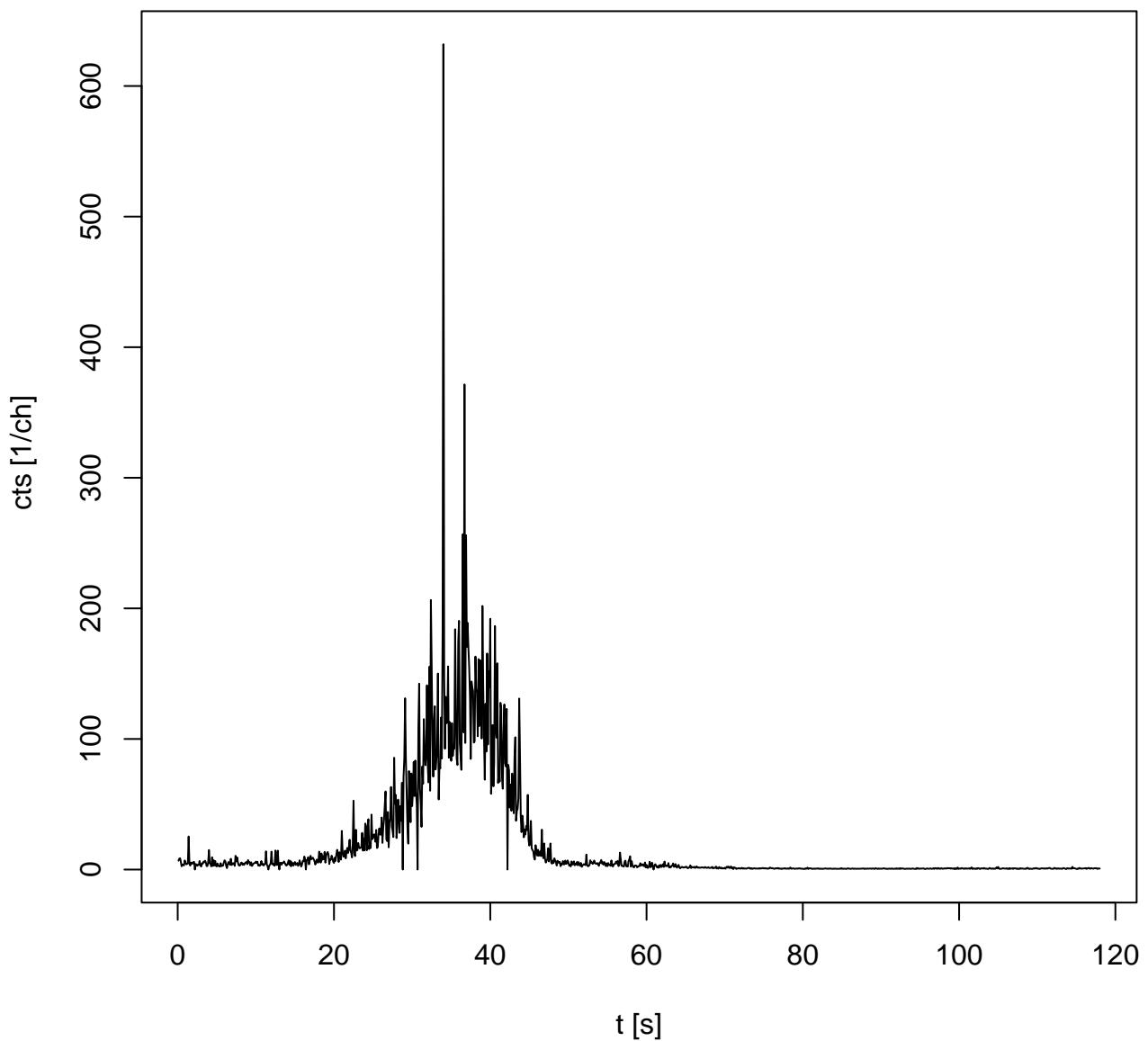
help("merge_RLum.Data.Curve")

TL (UVVIS)



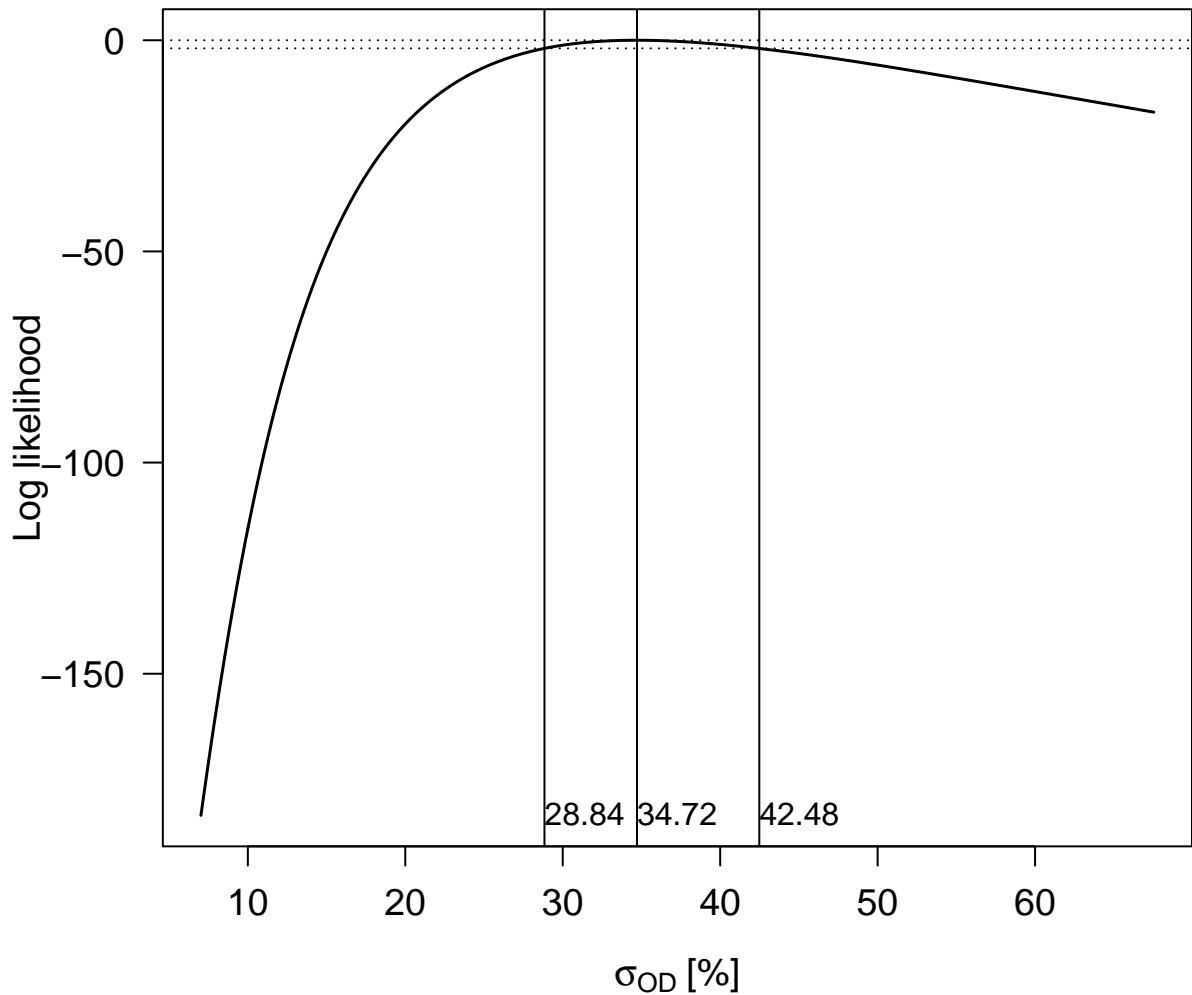
help("merge_RLum.Data.Curve")

TL (UVVIS)

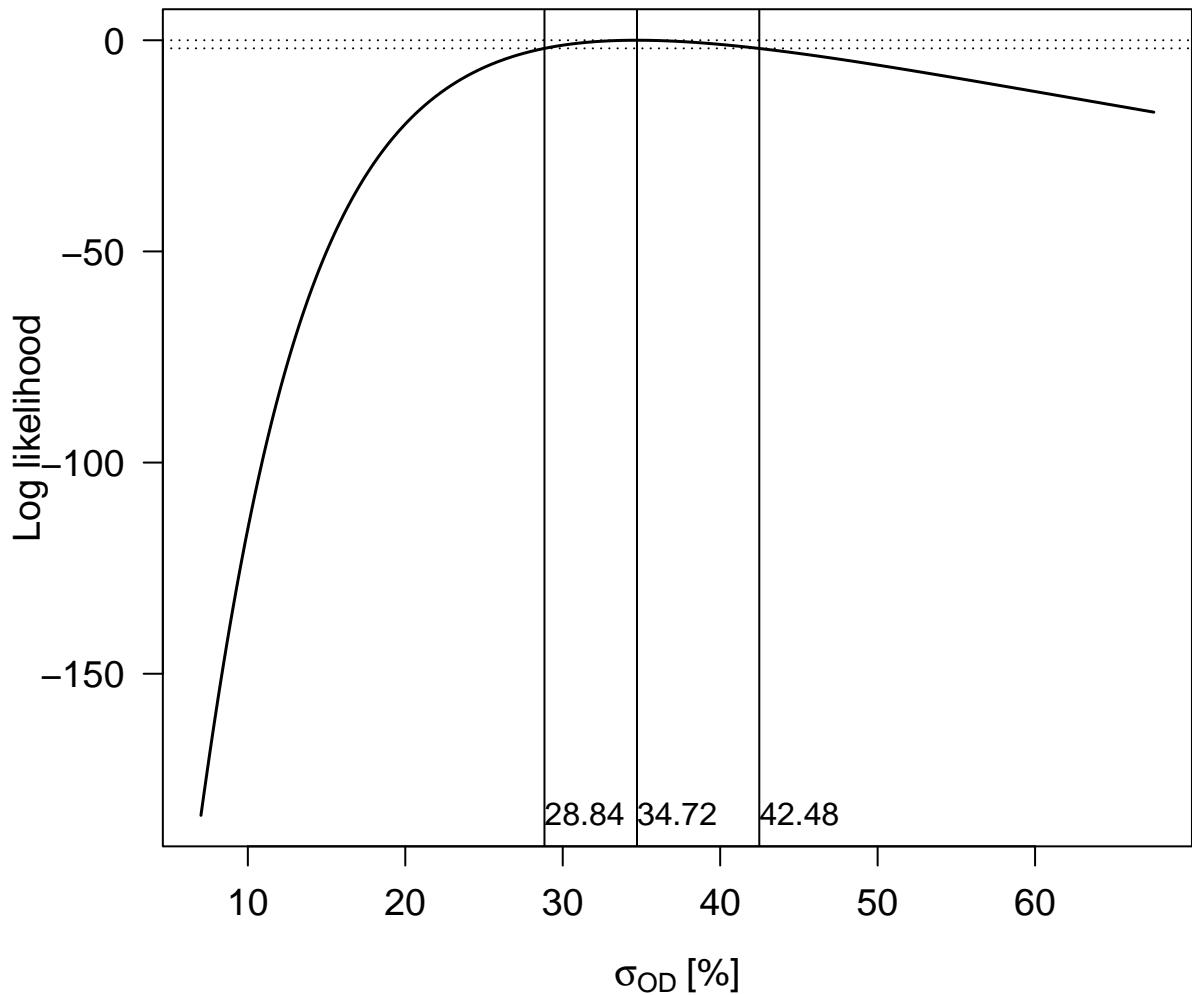


help("merge_RLum.Data.Curve")

Profile log likelihood for σ_{OD}



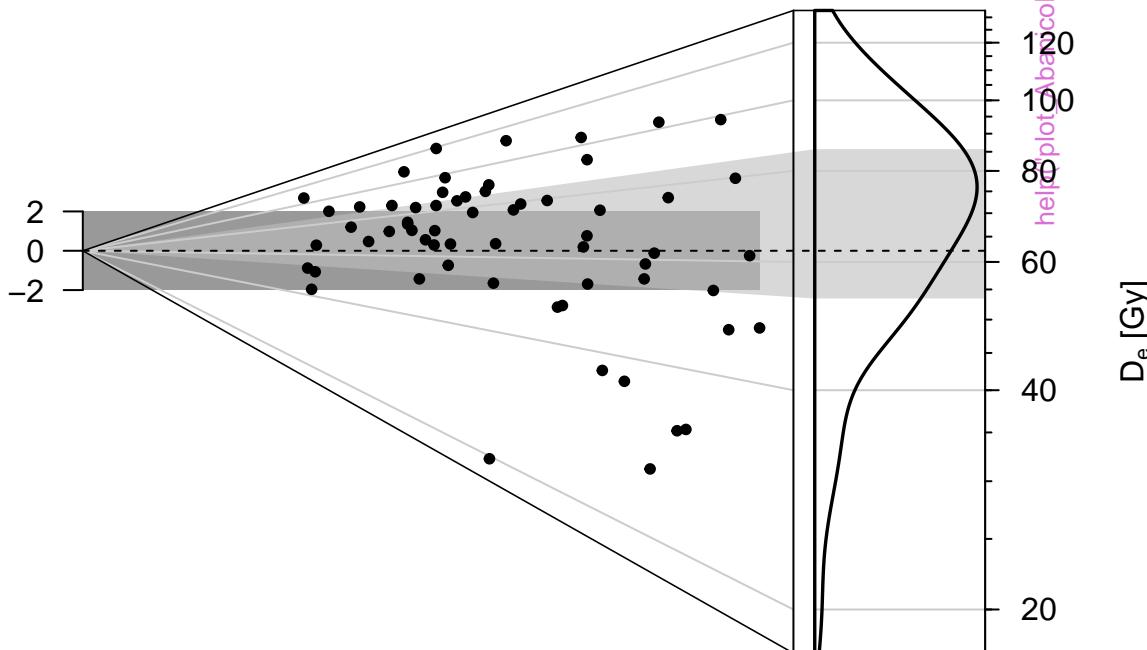
Profile log likelihood for σ_{OD}



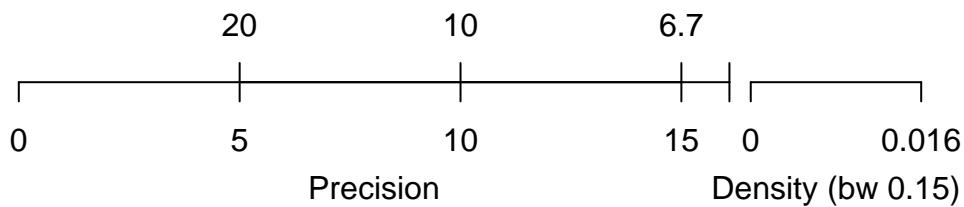
D_e distribution

$n = 62$ | in 2 sigma = 41.9 %

Standardised estimate



Relative standard error (%)

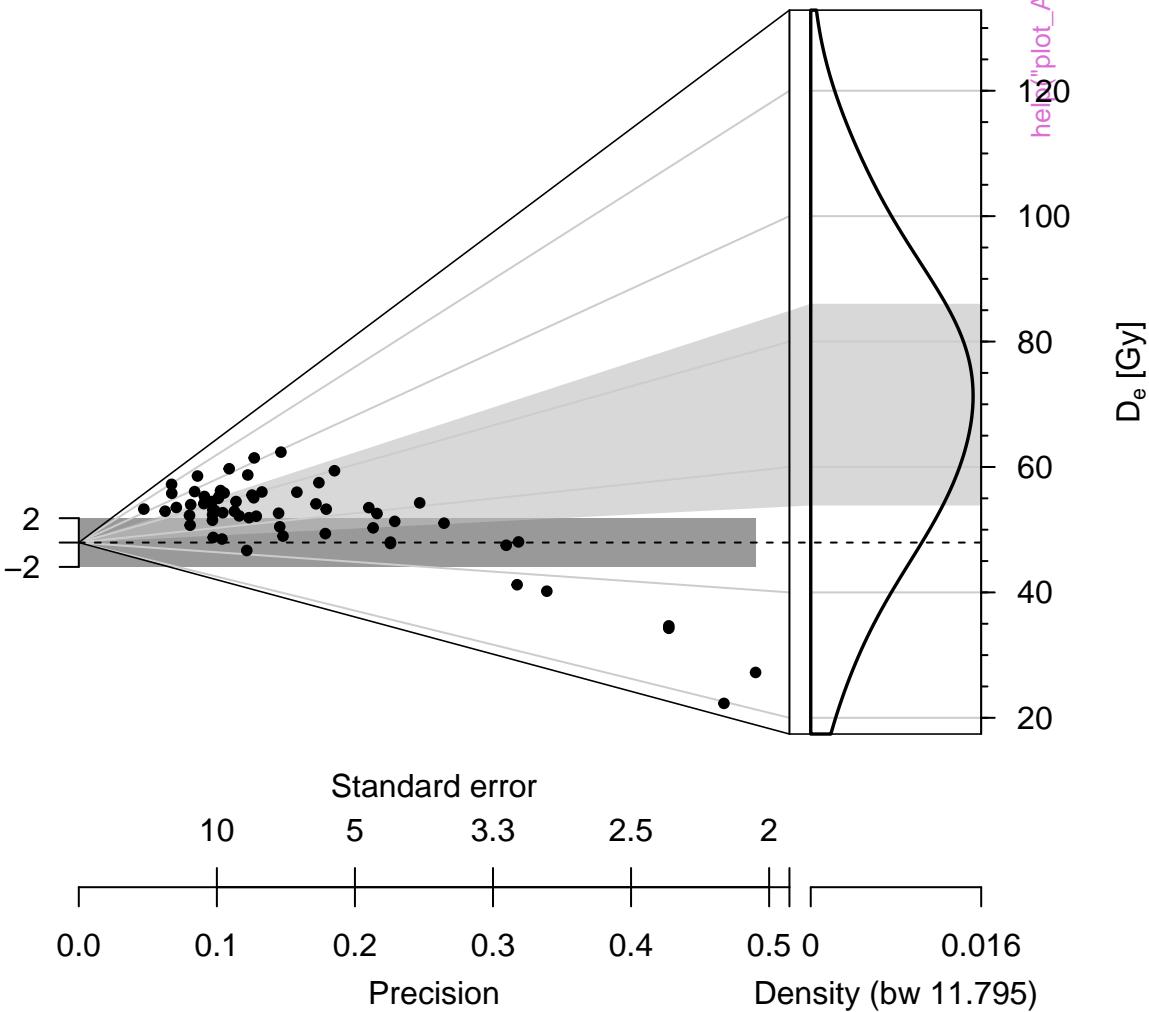


help("plot_AbanicoPlot")

D_e distribution

$n = 62$ | in 2 sigma = 24.2 %

Standardised estimate

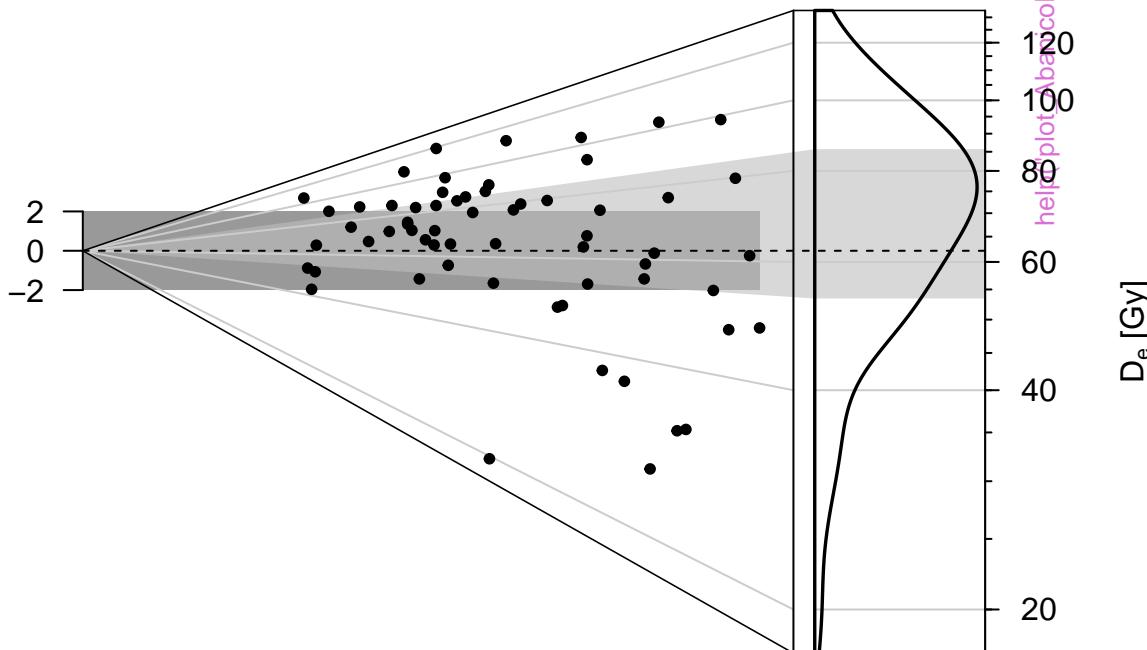


help("plot_AbanicoPlot")

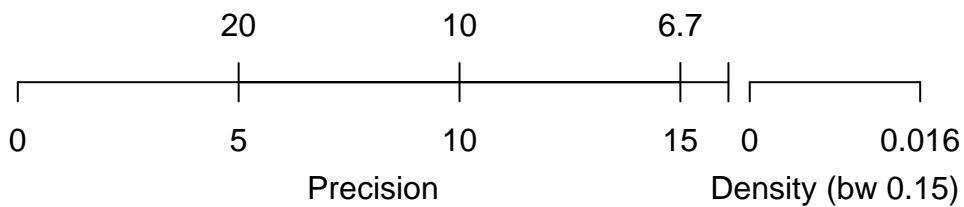
D_e distribution

$n = 62$ | in 2 sigma = 41.9 %

Standardised estimate



Relative standard error (%)



Precision

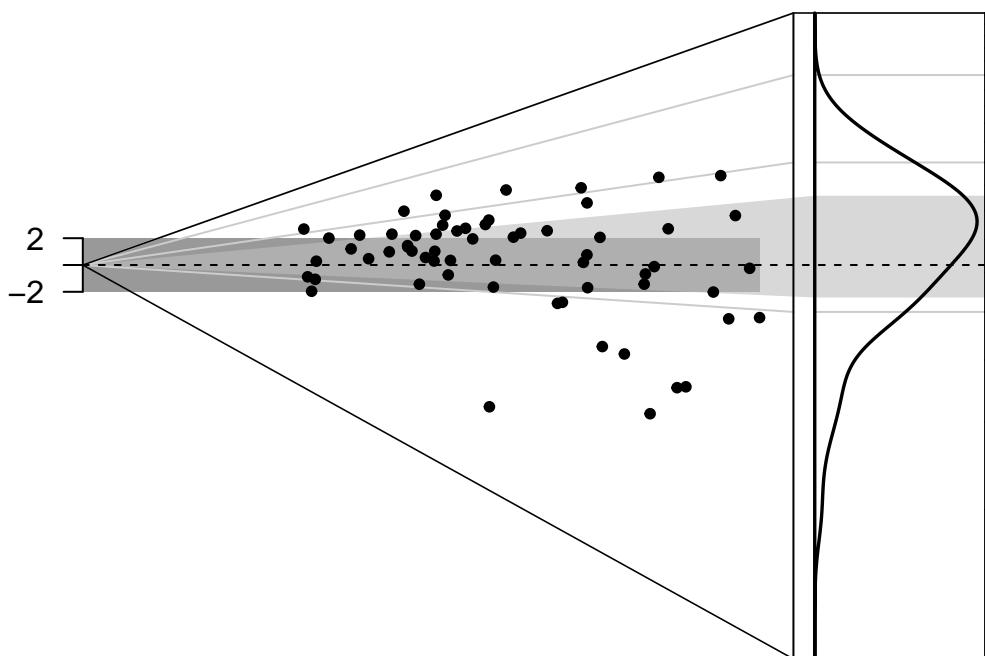
Density (bw 0.15)

help("plot_AbanicoPlot")

D_e distribution

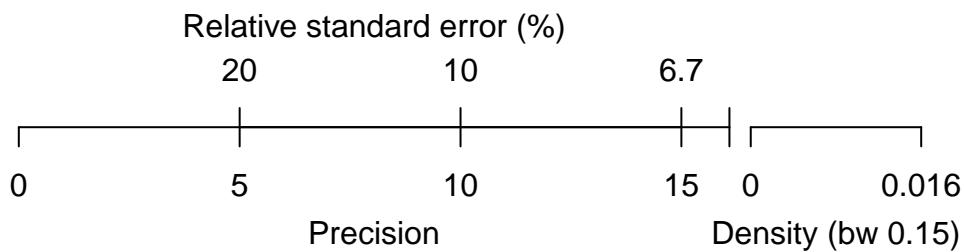
$n = 62$ | in 2 sigma = 41.9 %

Standardised estimate



D_e [Gy]

help("plot_AbanicoPlot")
200
150
100
50

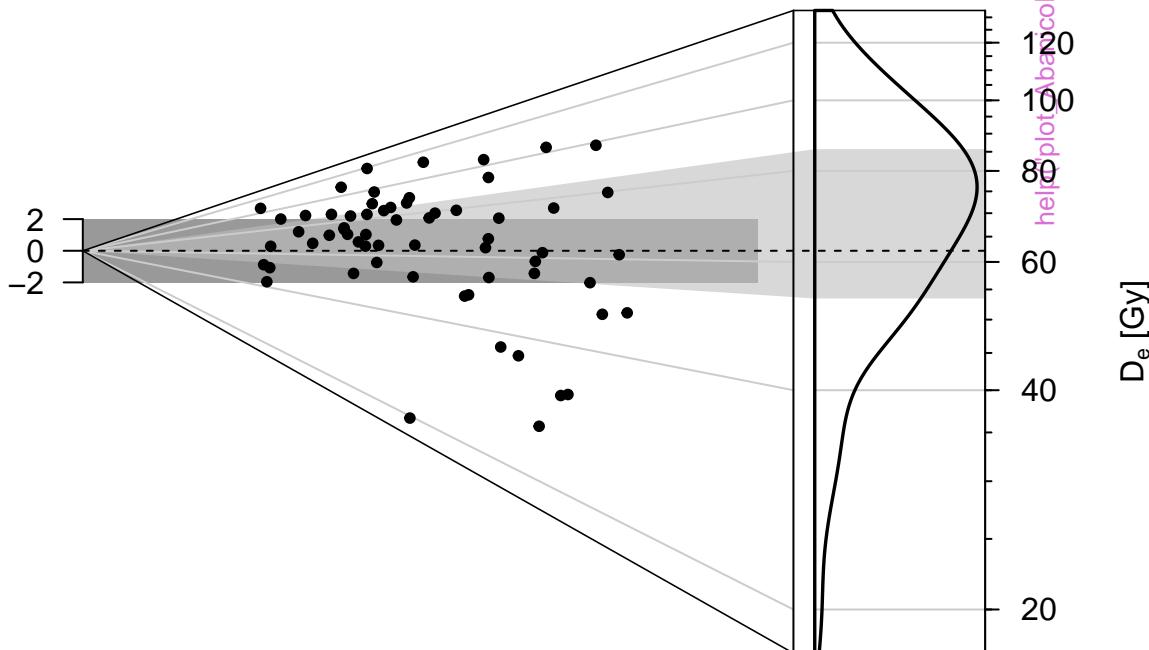


help("plot_AbanicoPlot")

D_e distribution

$n = 62$ | in 2 sigma = 41.9 %

Standardised estimate

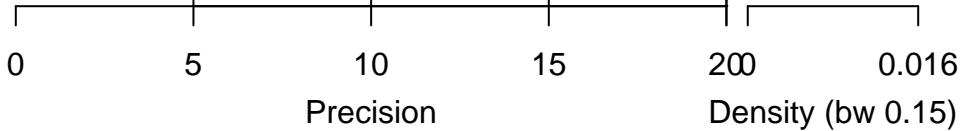


help("plot_AbanicoPlot")

Relative standard error (%)

20 10 6.7

5



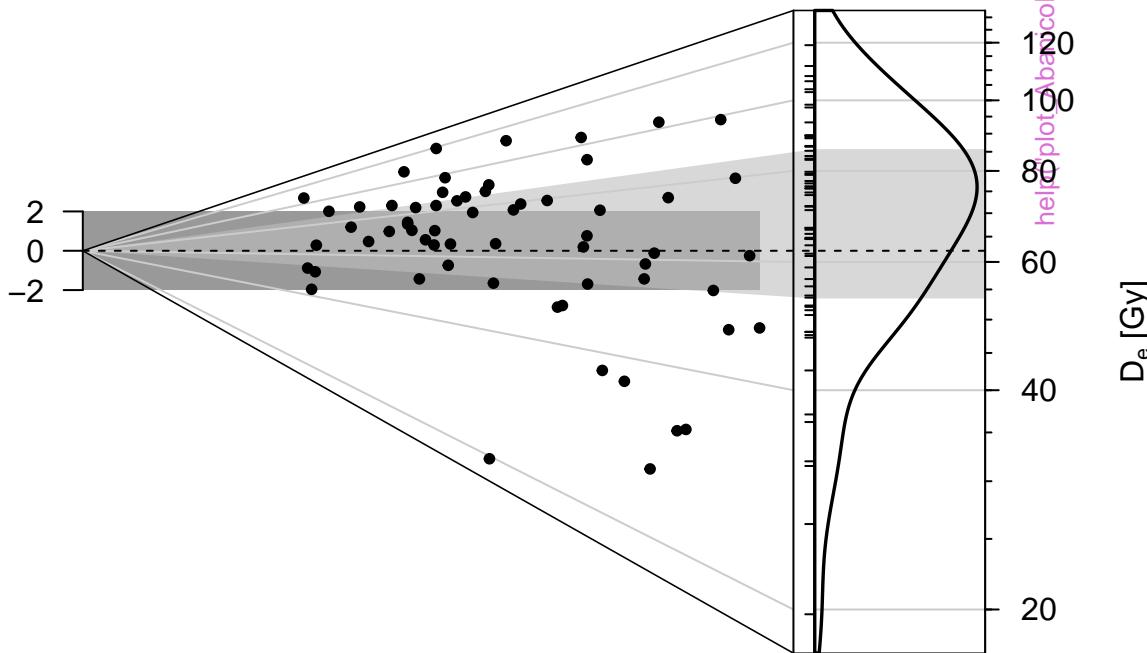
Precision

Density (bw 0.15)

D_e distribution

$n = 62$ | in 2 sigma = 41.9 %

Standardised estimate



help("plot_AbanicoPlot")

Relative standard error (%)

20

10

6.7

0

5

10

15

0.016

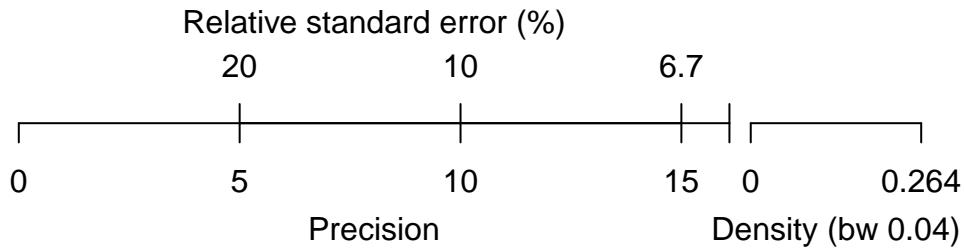
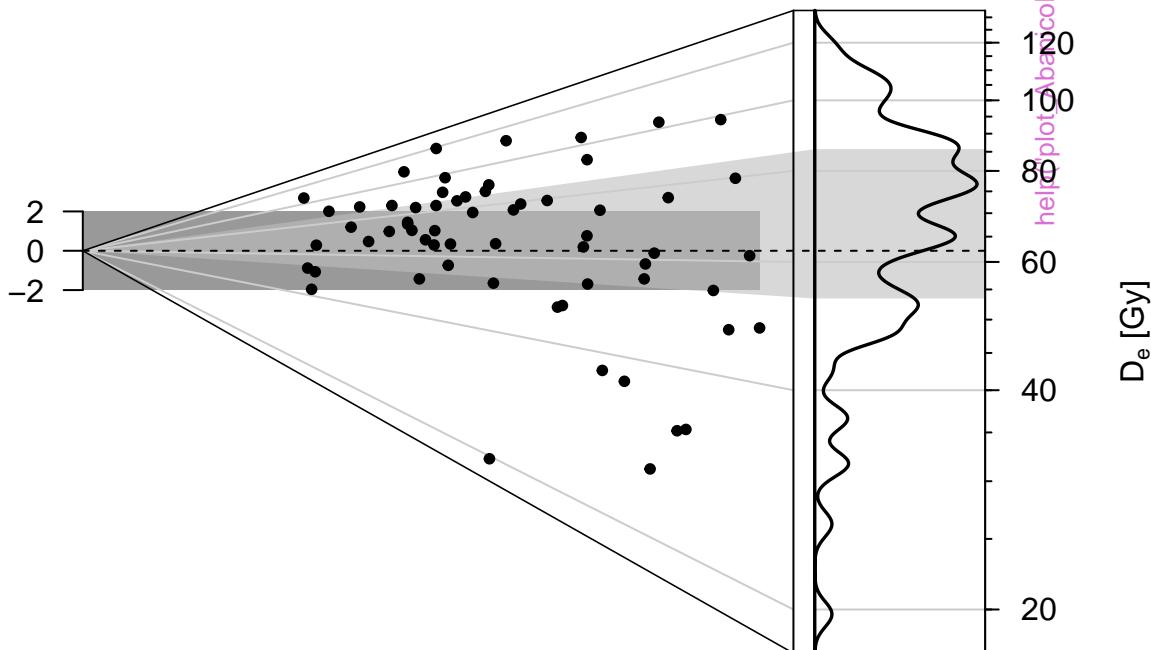
Precision

Density (bw 0.15)

D_e distribution

$n = 62$ | in 2 sigma = 41.9 %

Standardised estimate

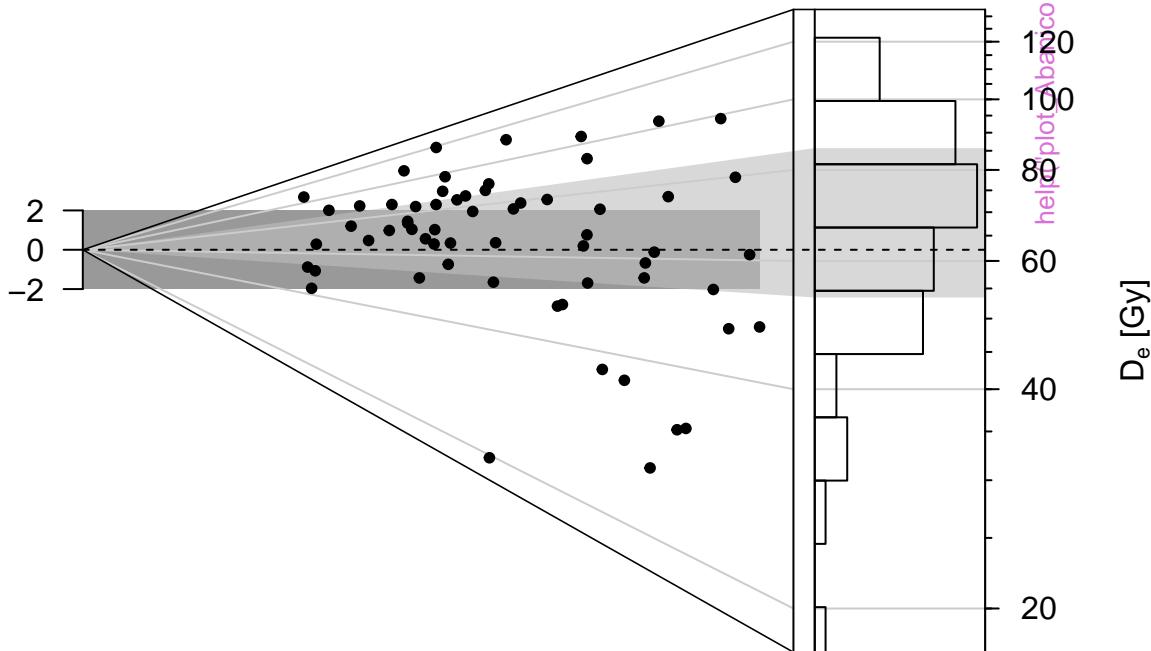


help("plot_AbanicoPlot")

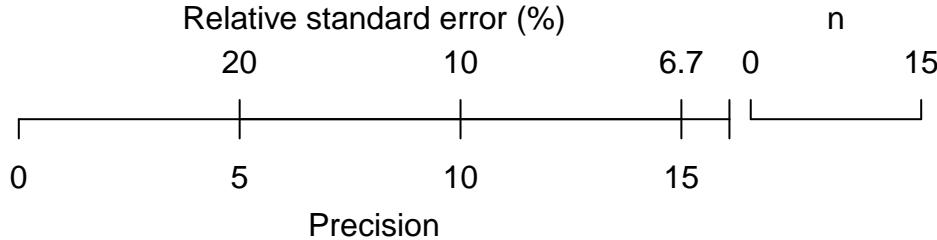
D_e distribution

$n = 62$ | in 2 sigma = 41.9 %

Standardised estimate



Relative standard error (%)

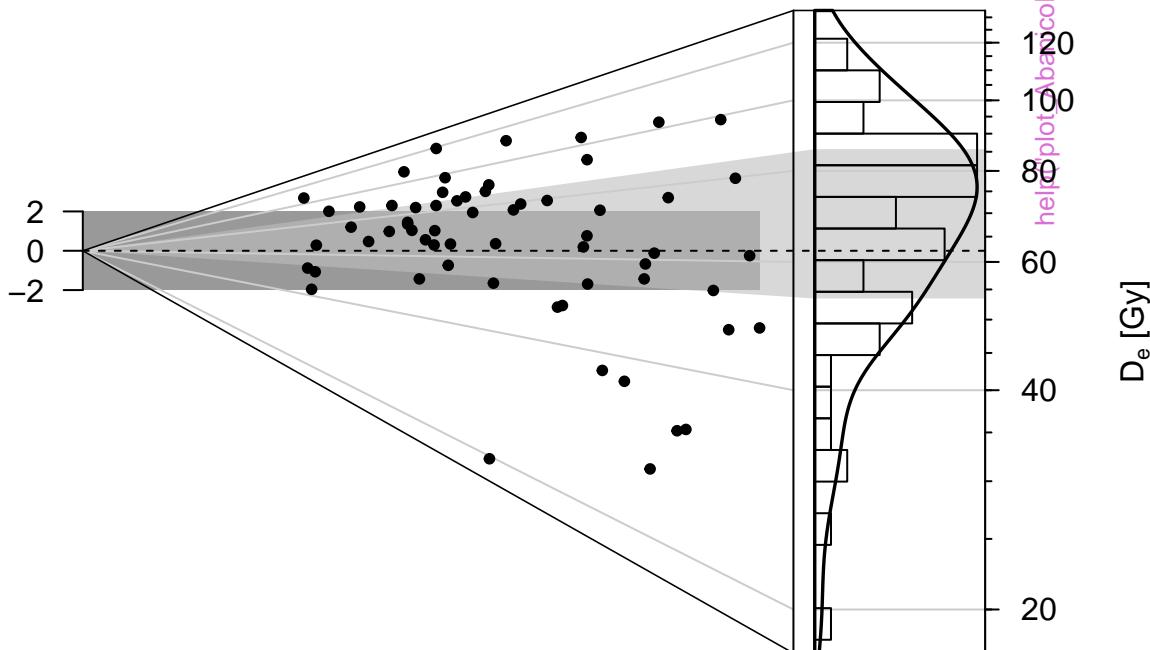


help("plot_AbanicoPlot")

D_e distribution

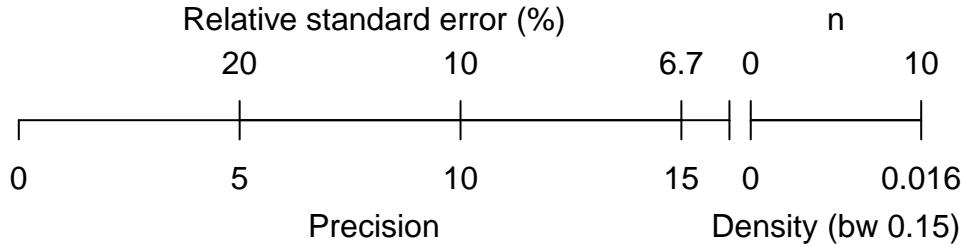
$n = 62$ | in 2 sigma = 41.9 %

Standardised estimate



help("plot_AbanicoPlot")

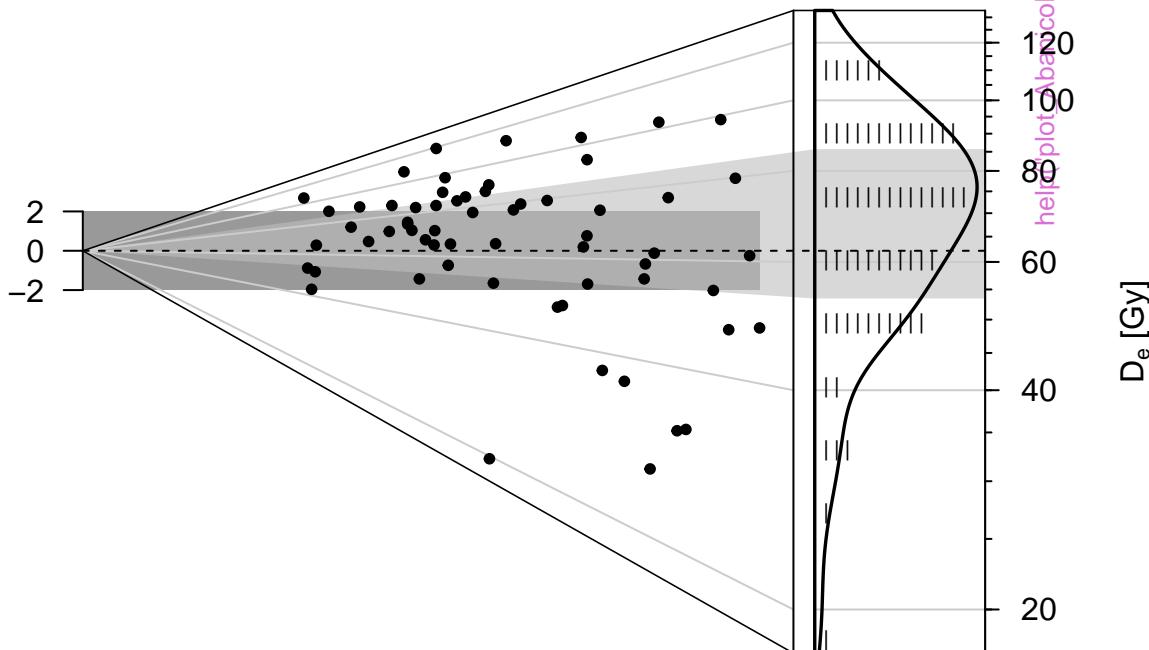
Relative standard error (%)



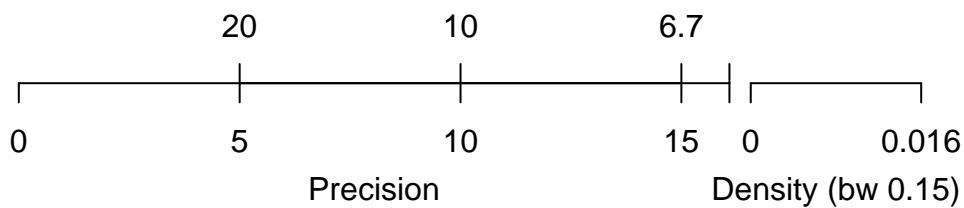
D_e distribution

$n = 62$ | in 2 sigma = 41.9 %

Standardised estimate



Relative standard error (%)

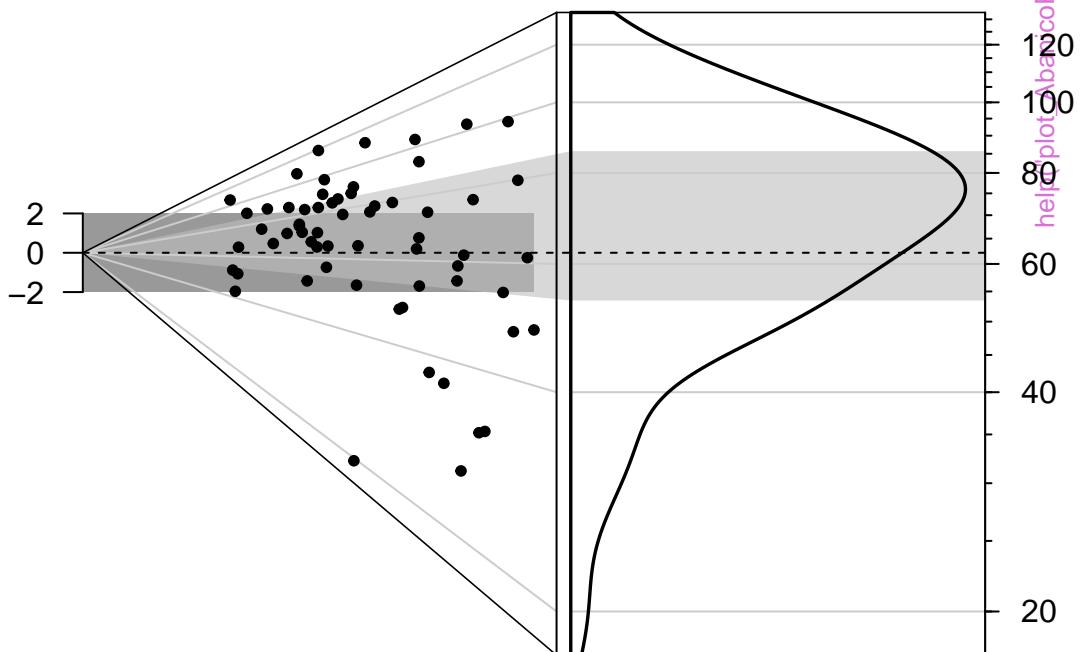


help("plot_AbanicoPlot")

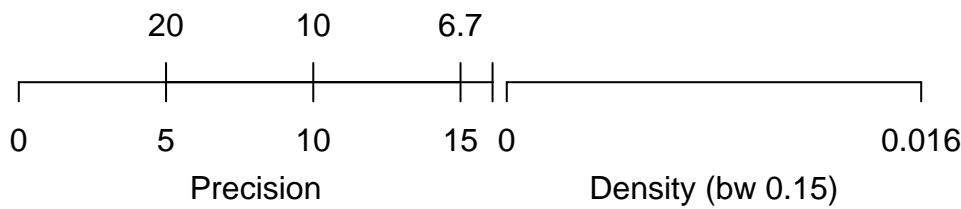
D_e distribution

$n = 62$ | in 2 sigma = 41.9 %

Standardised estimate



Relative standard error (%)

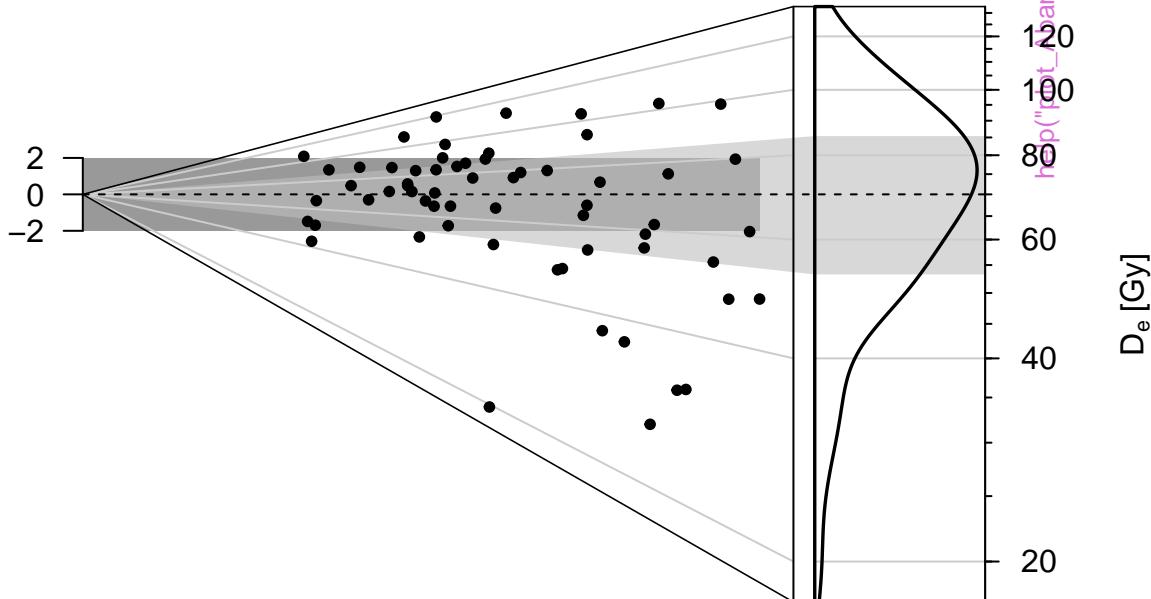


help("plot_AbanicoPlot")

D_e distribution

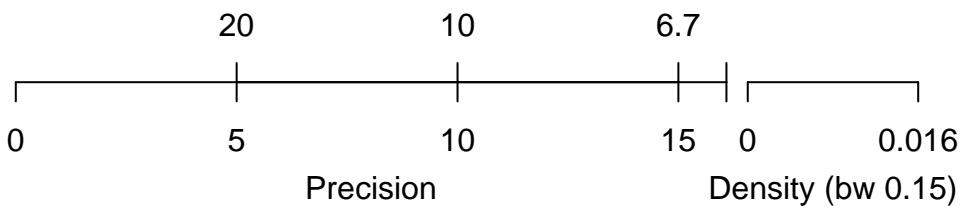
$n = 62$ | in 2 sigma = 53.2 %

Standardised estimate



help("plot_AbanicoPlot")

Relative standard error (%)



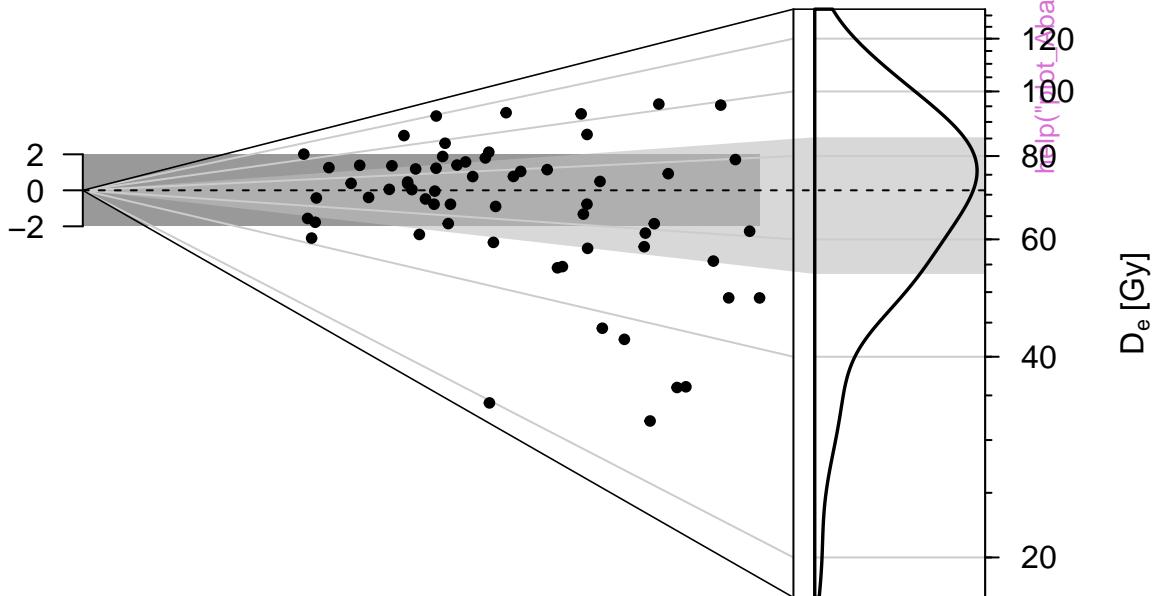
Precision

Density (bw 0.15)

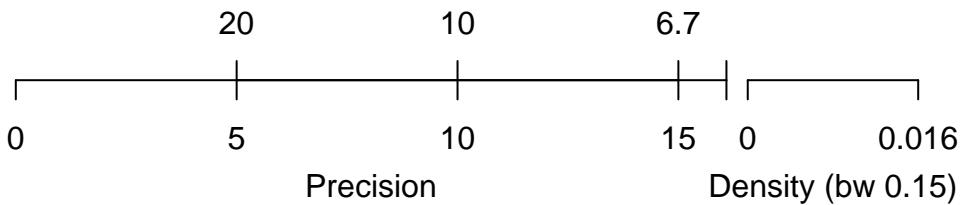
D_e distribution

$n = 62$ | in 2 sigma = 54.8 %

Standardised estimate



Relative standard error (%)



Precision

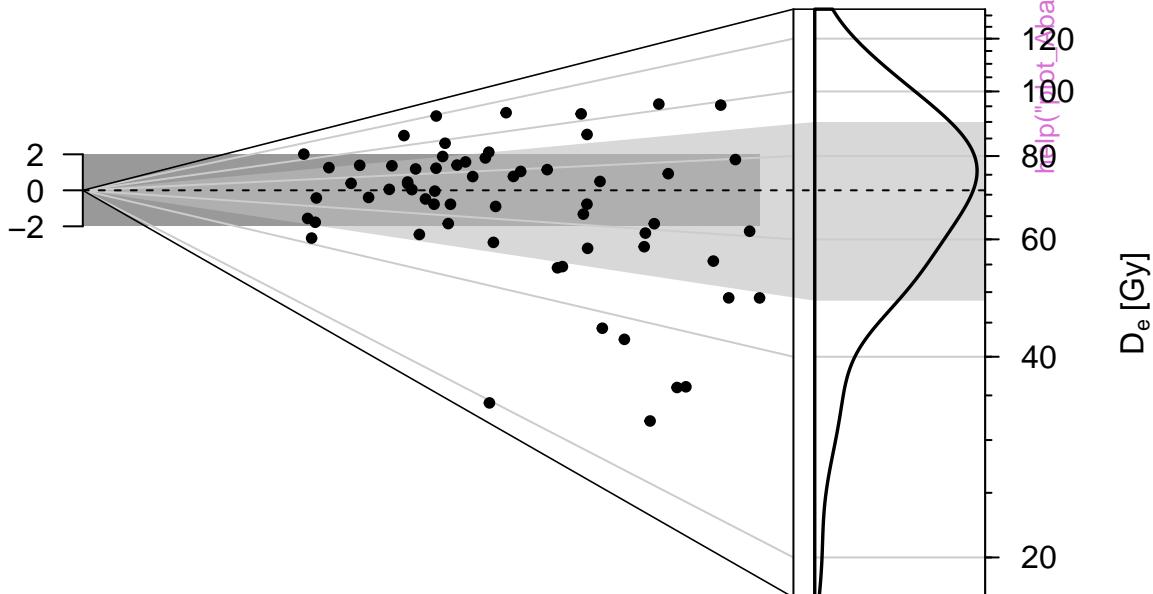
Density (bw 0.15)

help("plot_AbanicoPlot")

D_e distribution

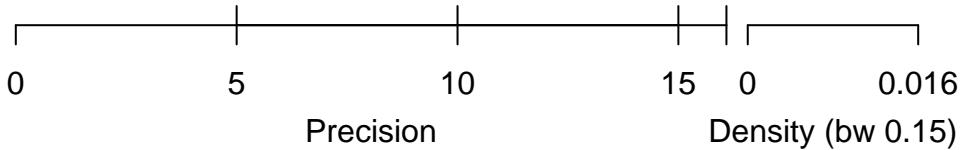
$n = 62$ | in 2 sigma = 54.8 %

Standardised estimate



Relative standard error (%)

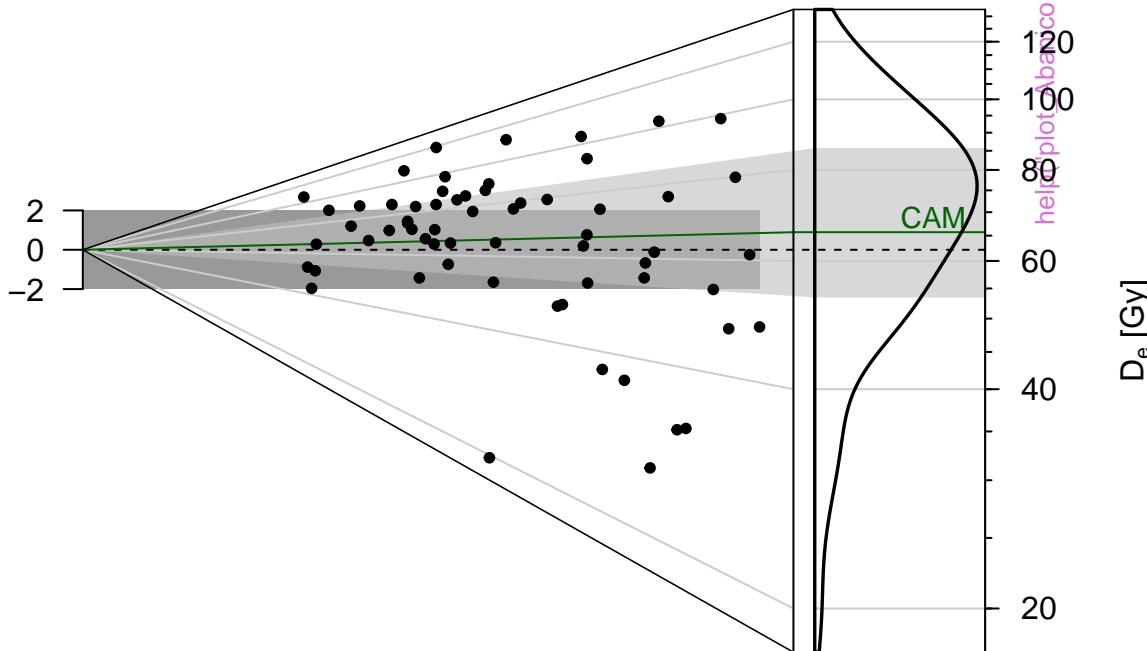
20 10 6.7



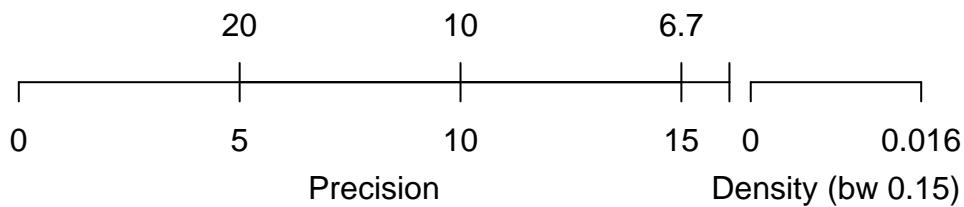
D_e distribution

$n = 62$ | in 2 sigma = 41.9 %

Standardised estimate



Relative standard error (%)



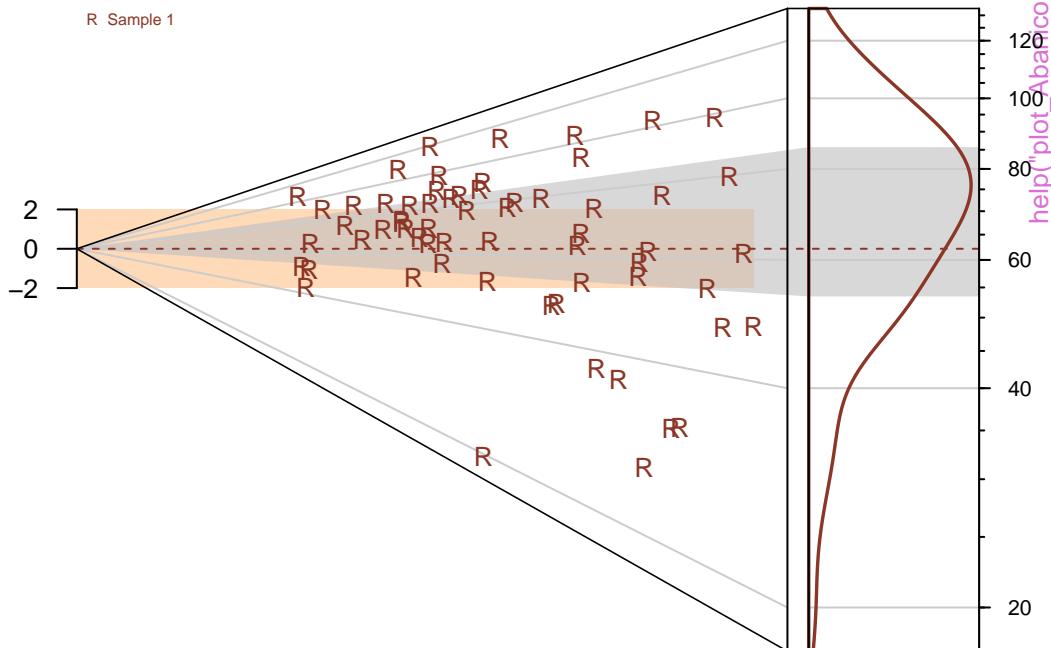
help("plot_AbanicoPlot")

D_e distribution

$n = 62$ | in 2 sigma = 41.9 %

Standardised estimate

R Sample 1



D_e [Gy]

help("plot_AbanicoPlot")

help("plot_AbanicoPlot")

Relative standard error (%)

20

10

6.7

0

5

10

15

0.016

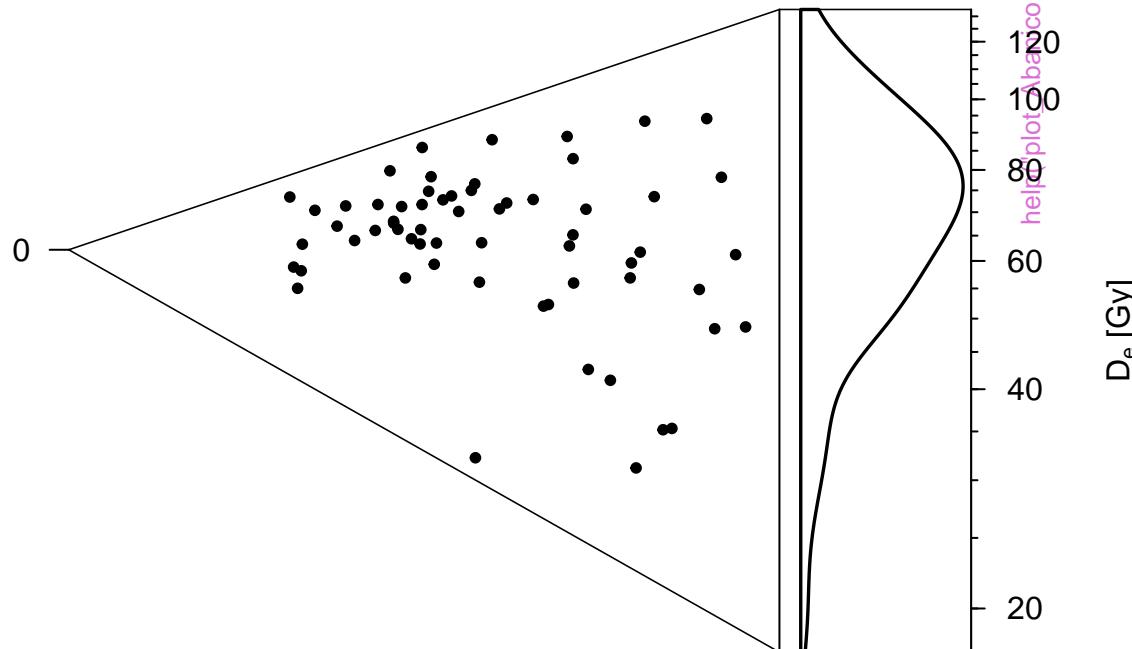
Precision

Density (bw 0.15)

D_e distribution

$n = 62$ | in 2 sigma = 41.9 %

Standardised estimate



help("plot_AbanicoPlot")

Relative standard error (%)

20

10

6.7

0

5

10

15

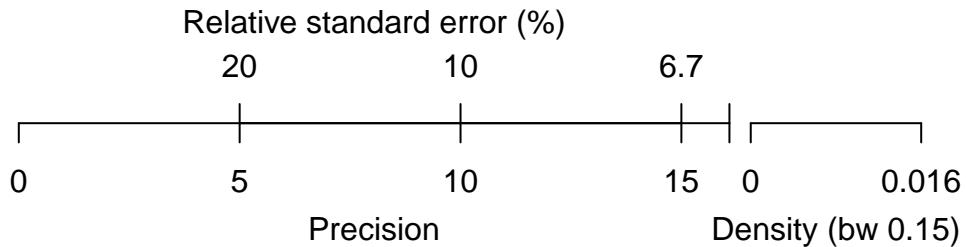
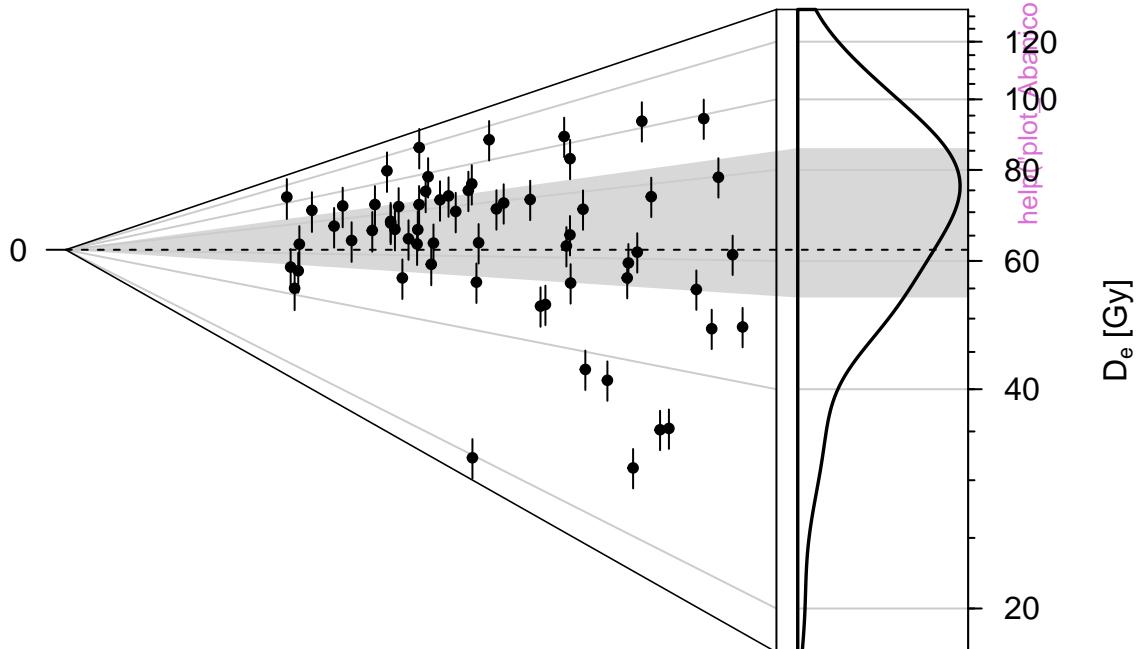
0.016

Precision

Density (bw 0.15)

D_e distribution

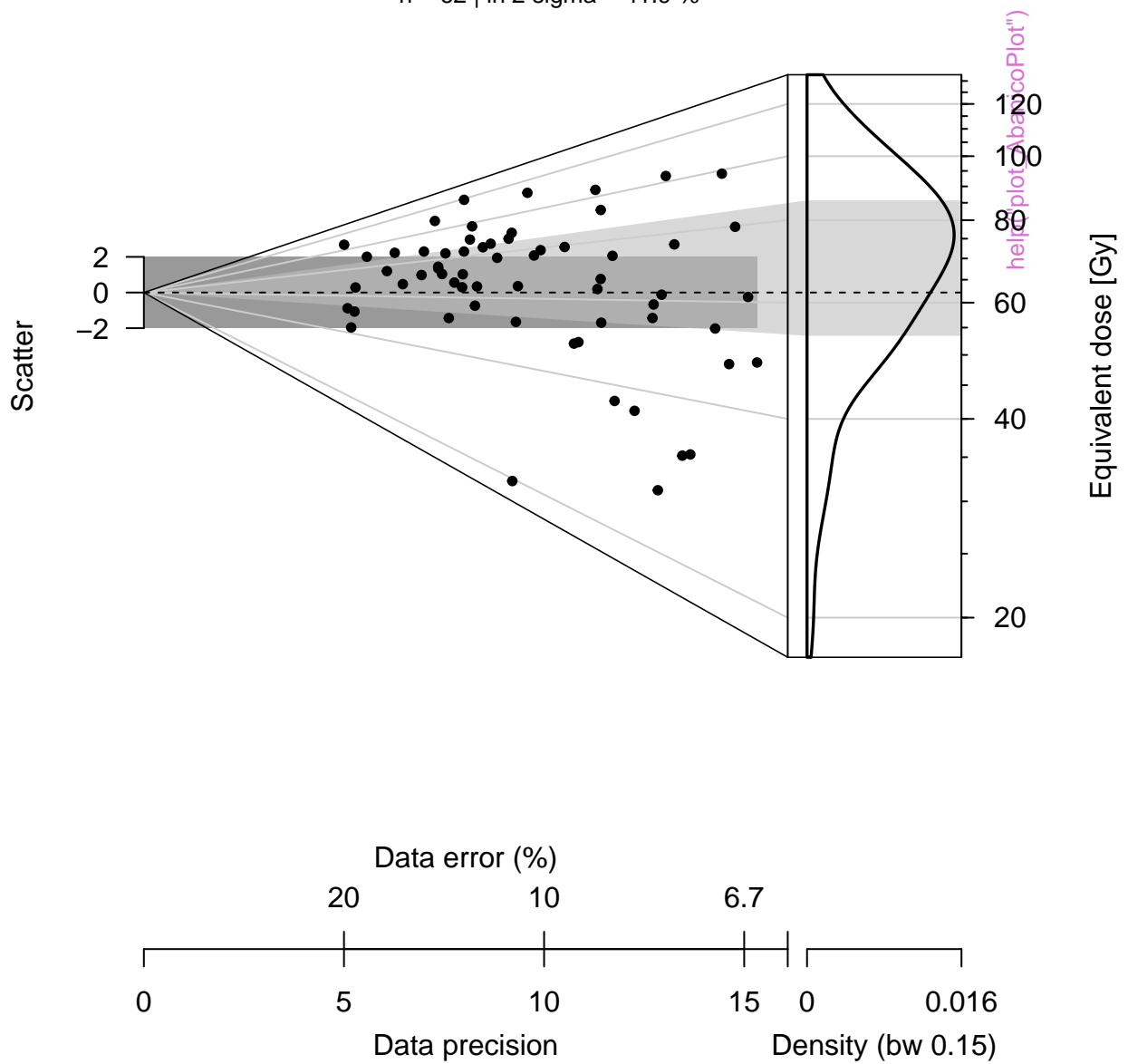
$n = 62$ | in 2 sigma = 41.9 %



help("plot_AbanicoPlot")

D_e distribution

$n = 62$ | in 2 sigma = 41.9 %

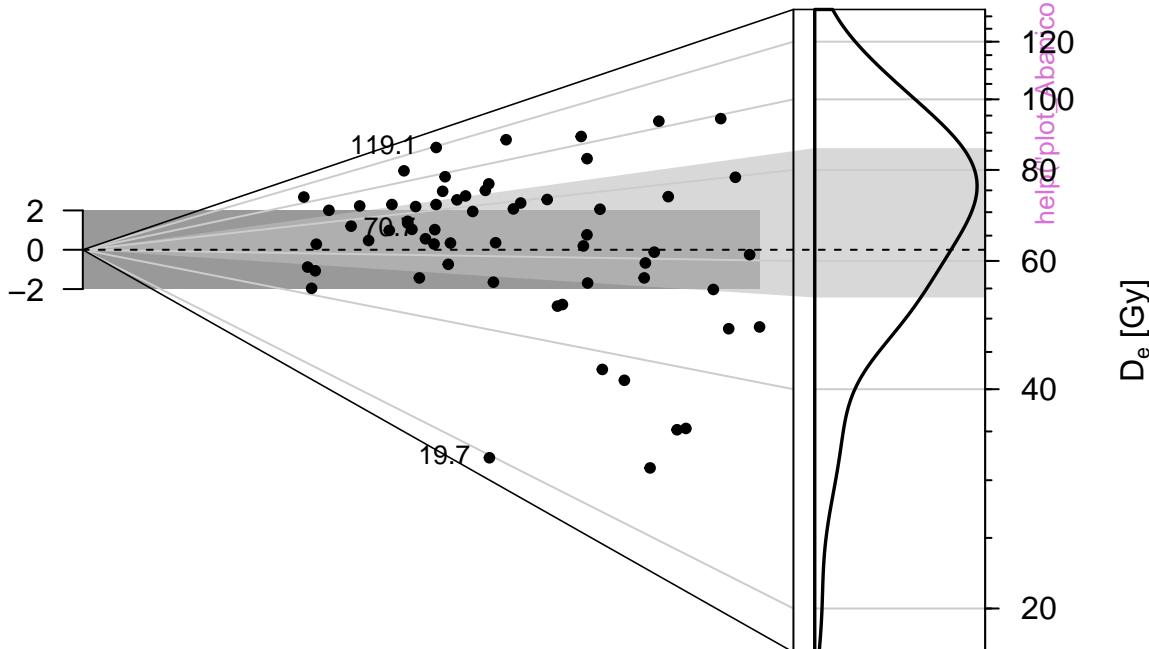


help("plot_AbanicoPlot")

D_e distribution

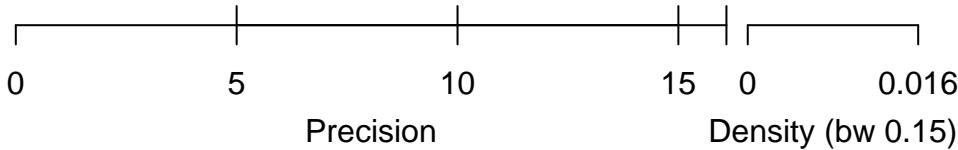
$n = 62$ | in 2 sigma = 41.9 %

Standardised estimate



Relative standard error (%)

20 10 6.7

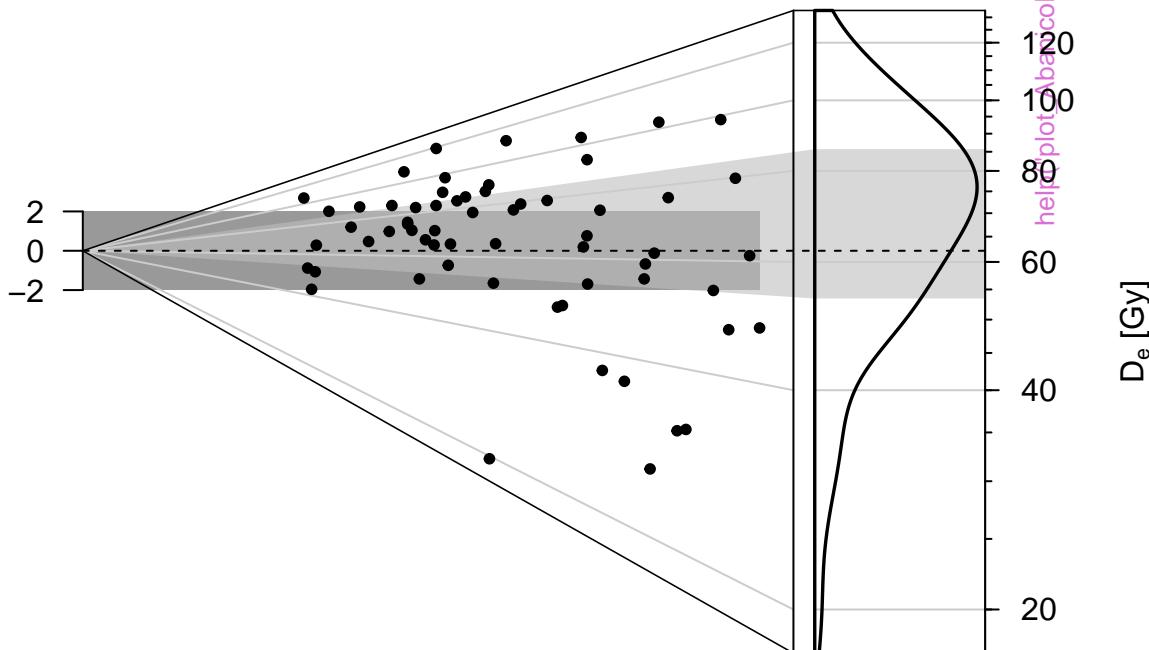


help("plot_AbanicoPlot")

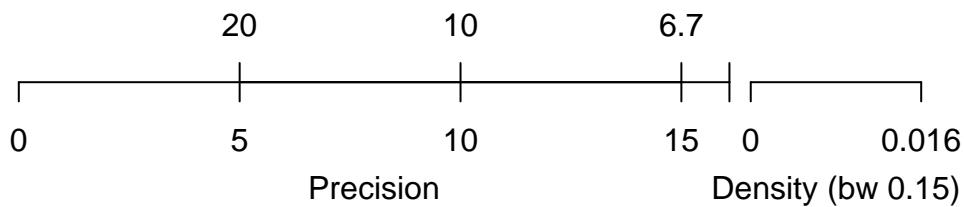
D_e distribution

$n = 62$ | in 2 sigma = 41.9 %

Standardised estimate



Relative standard error (%)



Precision

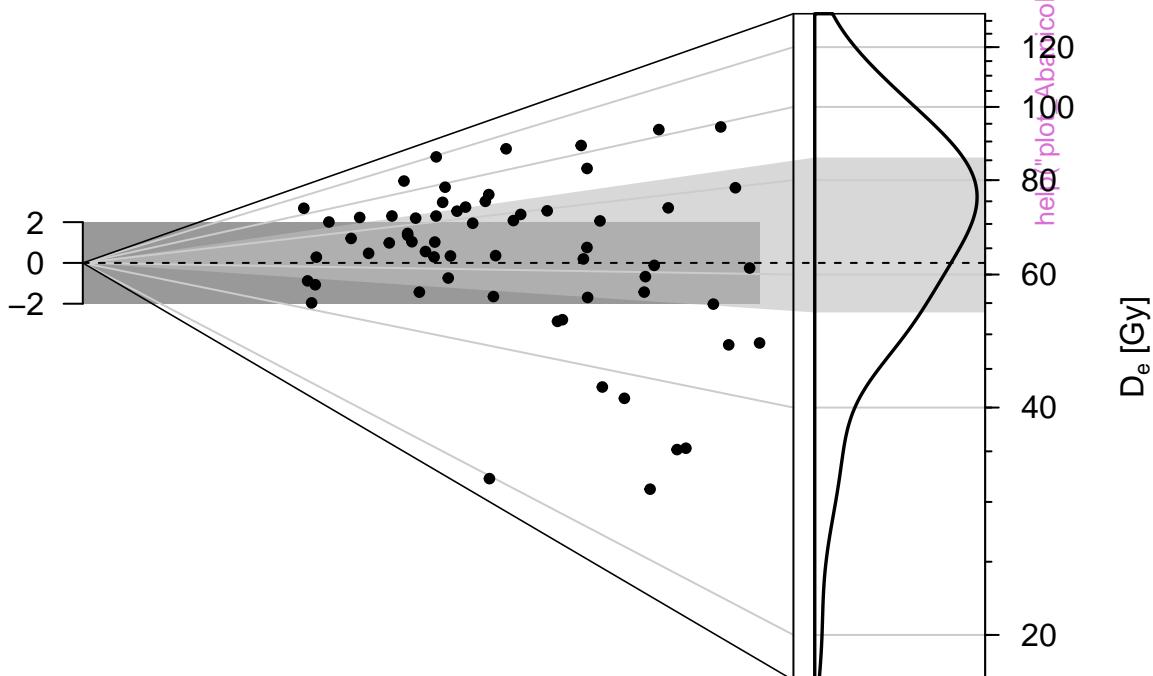
Density (bw 0.15)

help("plot_AbanicoPlot")

D_e distribution

median = 71.07

Standardised estimate



Relative standard error (%)

20

10

6.7

0

5

10

15

0 0.016

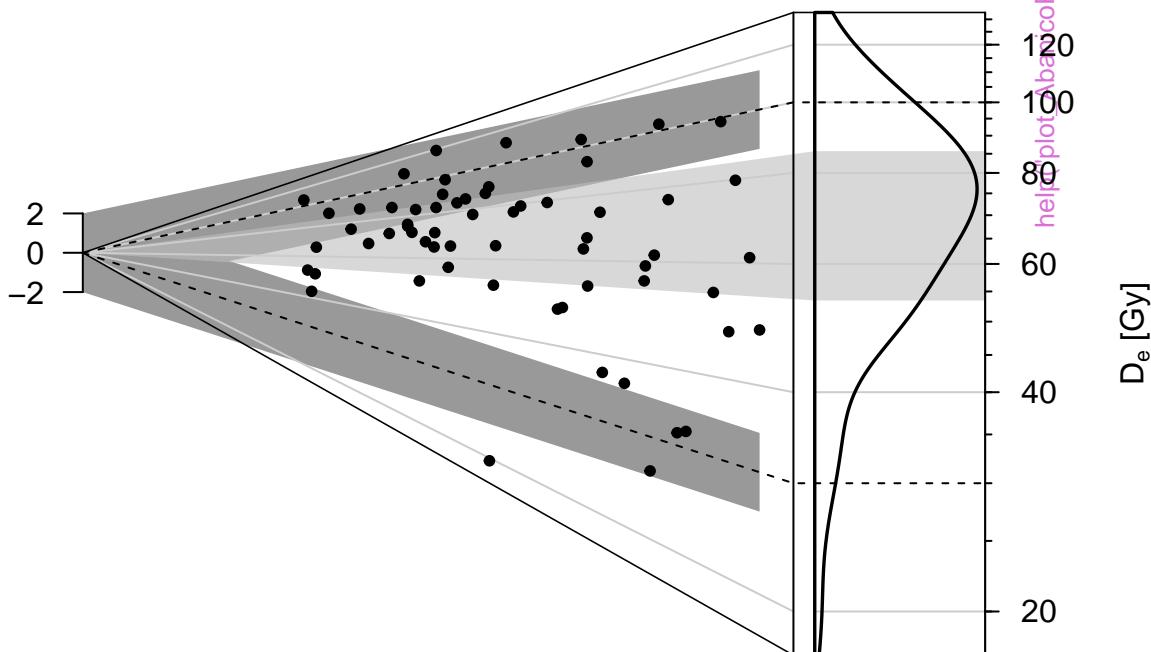
Precision

Density (bw 0.15)

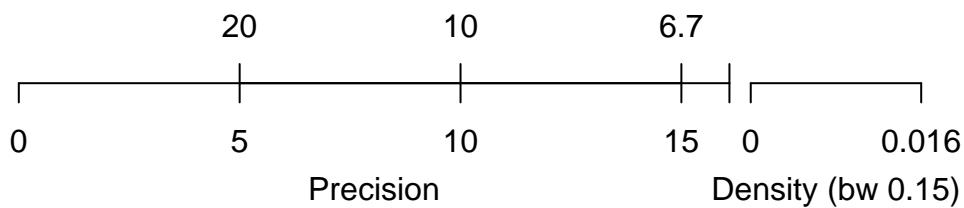
D_e distribution

$n = 62$ | in 2 sigma = 41.9 %

Standardised estimate



Relative standard error (%)



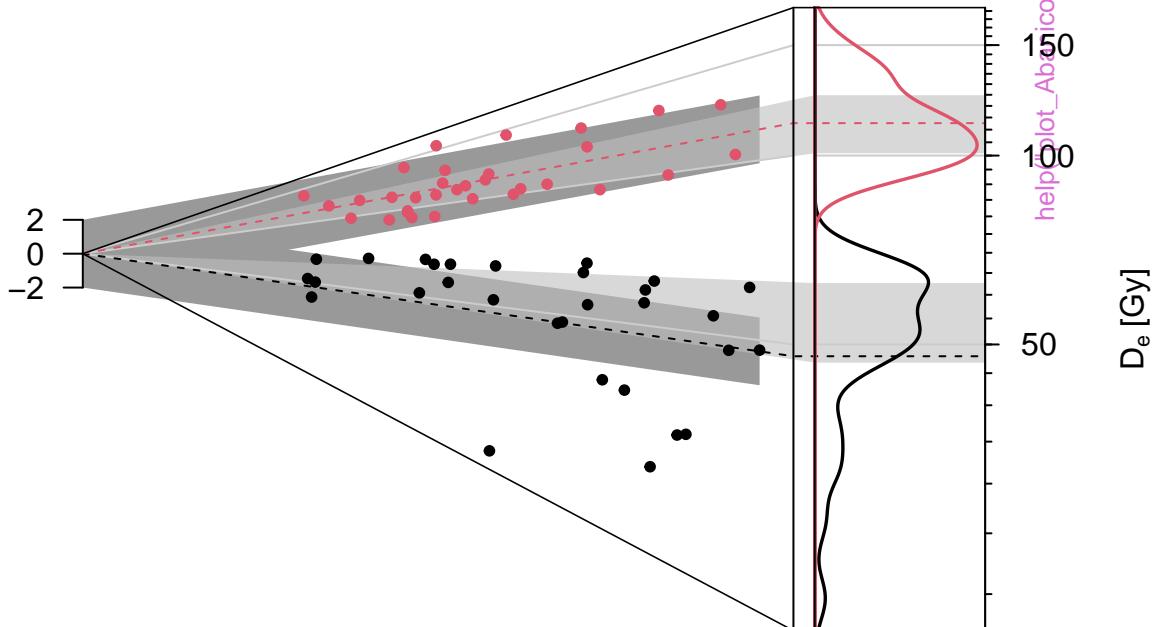
help("plot_AbanicoPlot")

D_e distribution

$n = 30 \mid \text{in 2 sigma} = 46.7\%$

$n = 32 \mid \text{in 2 sigma} = 87.5\%$

Standardised estimate



Relative standard error (%)

20

10

6.7

0

5

10

15

0.032

Precision

Density (bw 0.074)

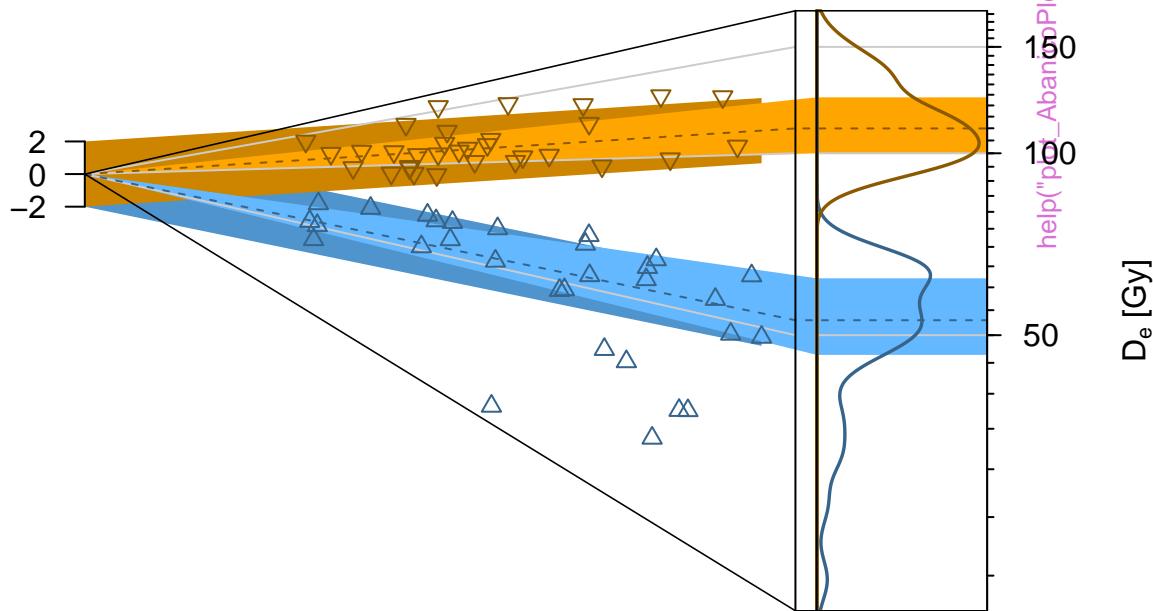
help("plot_AbanicoPlot")

D_e distribution

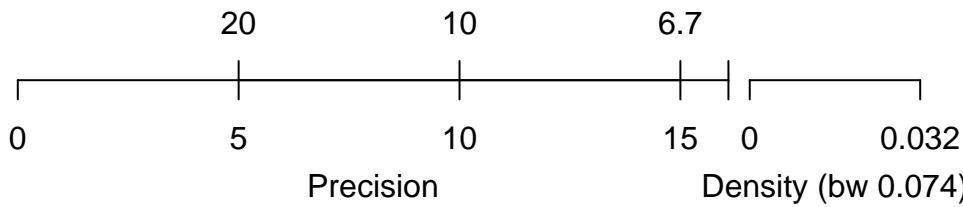
$n = 30$ | in 2 sigma = 70 % | median = 52.94

$n = 32$ | in 2 sigma = 84.4 % | median = 109.93

Standardised estimate

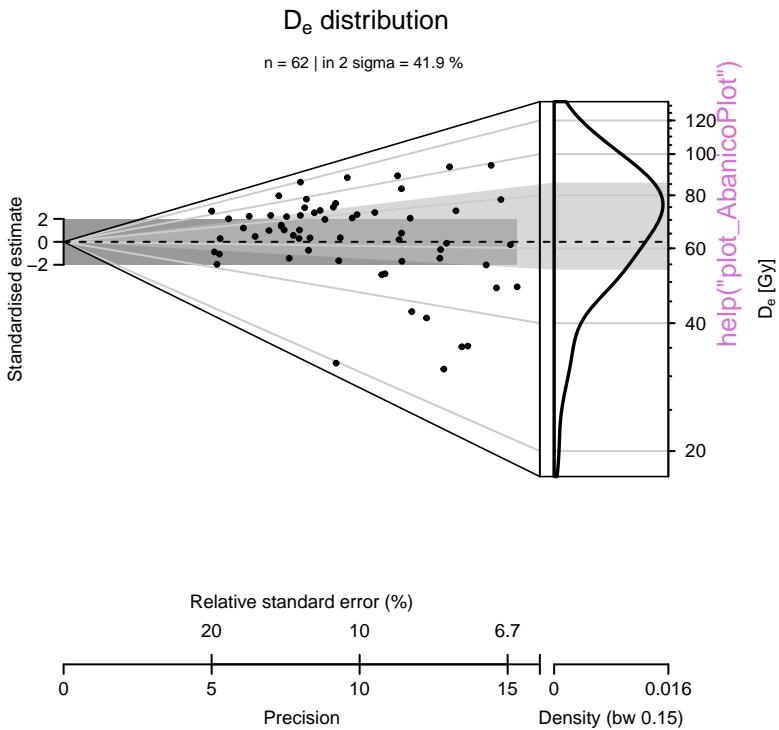


Relative standard error (%)

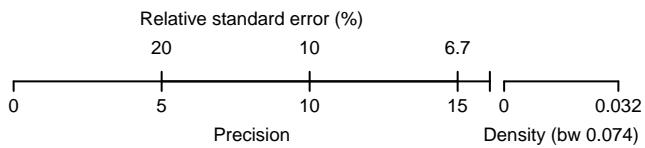
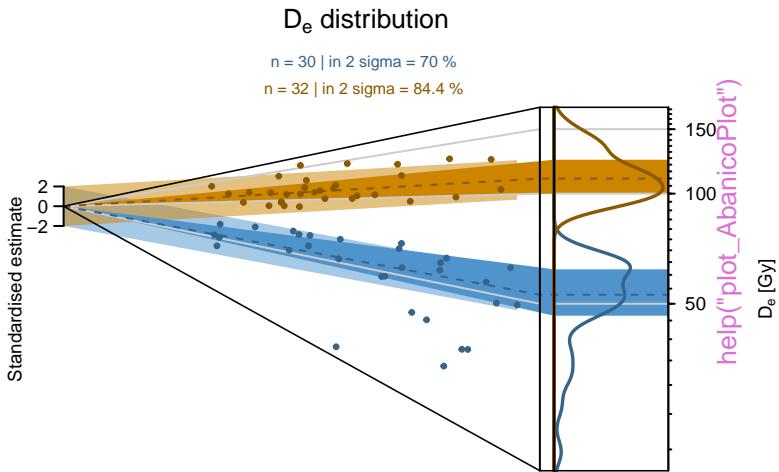


help("plot_AbanicoPlot")

help("plot_AbanicoPlot")



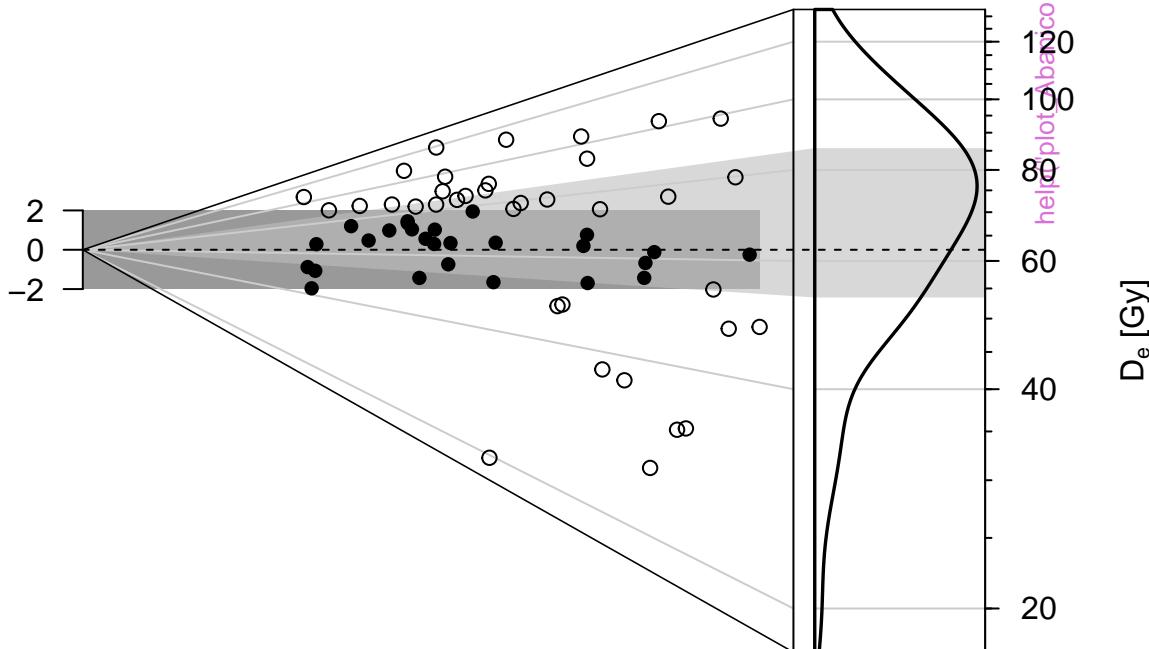
help("plot_AbanicoPlot")



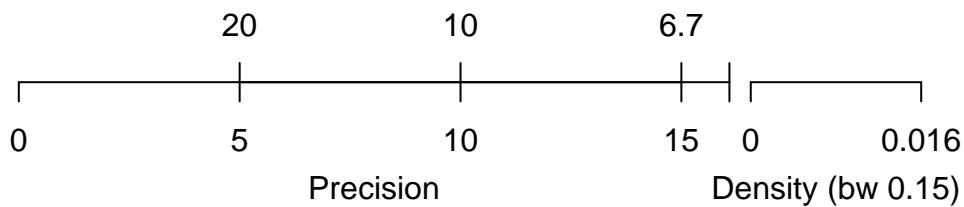
D_e distribution

$n = 62$ | in 2 sigma = 41.9 %

Standardised estimate

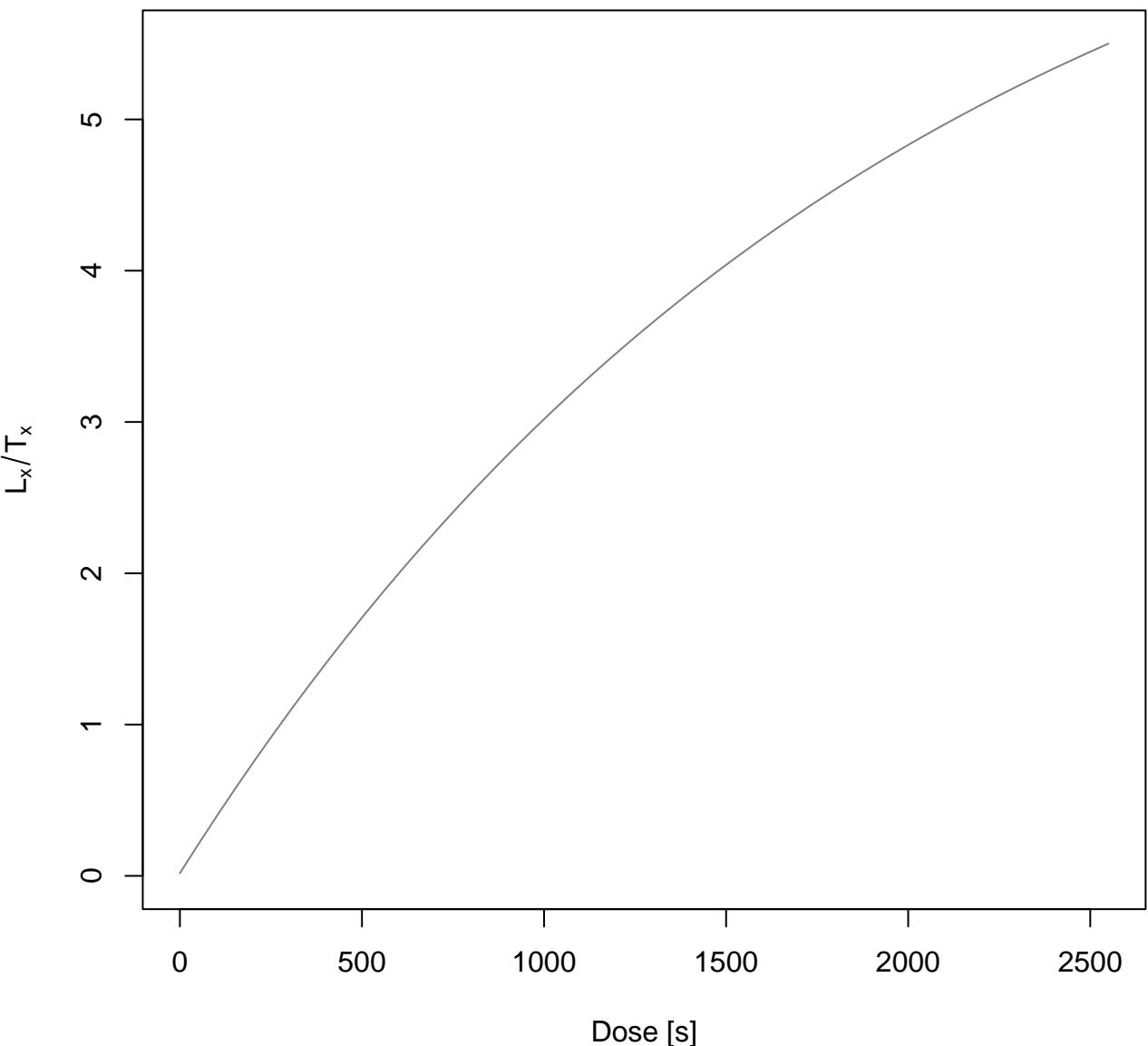


Relative standard error (%)



help("plot_AbanicoPlot")

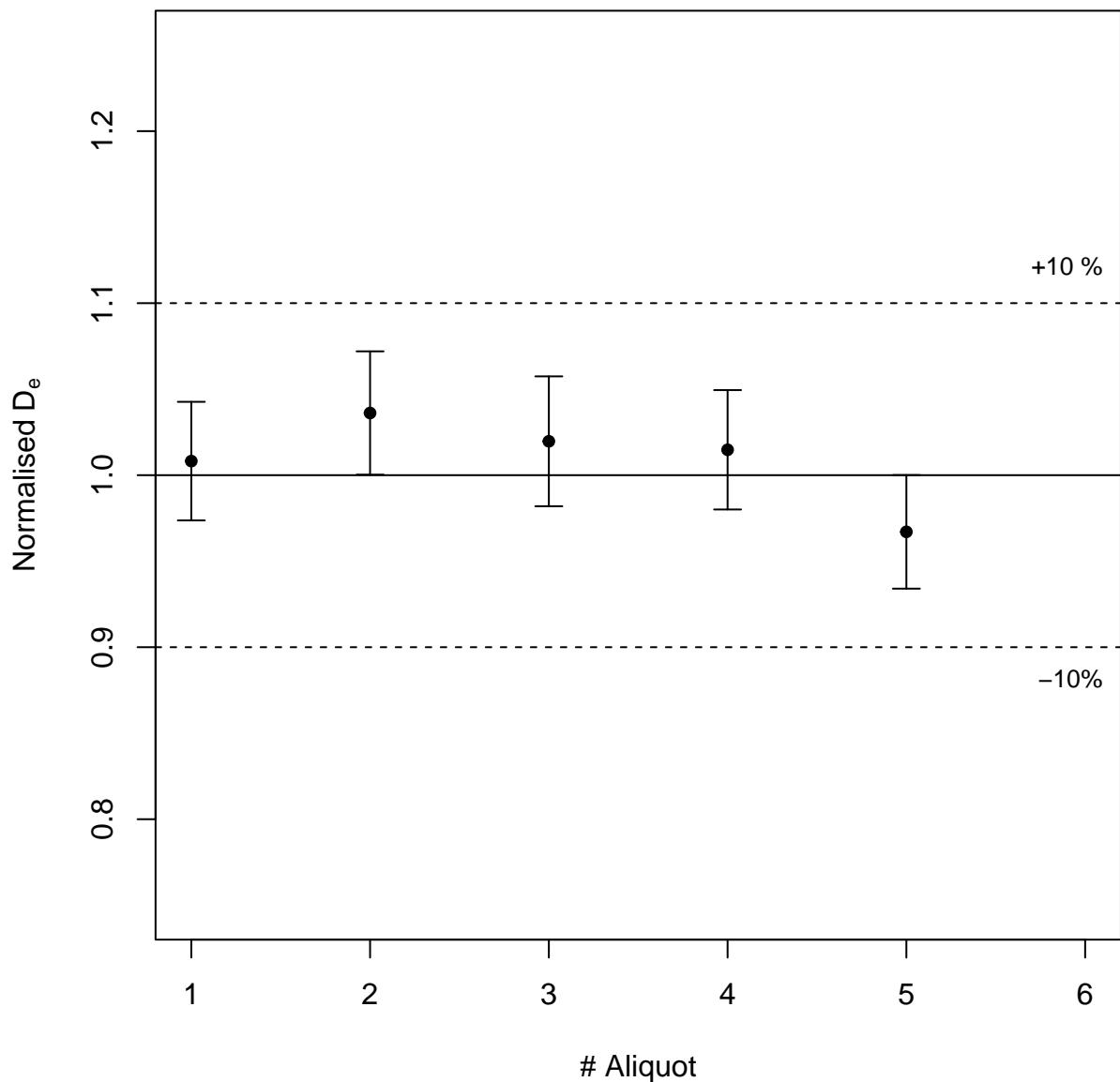
DRC Summary



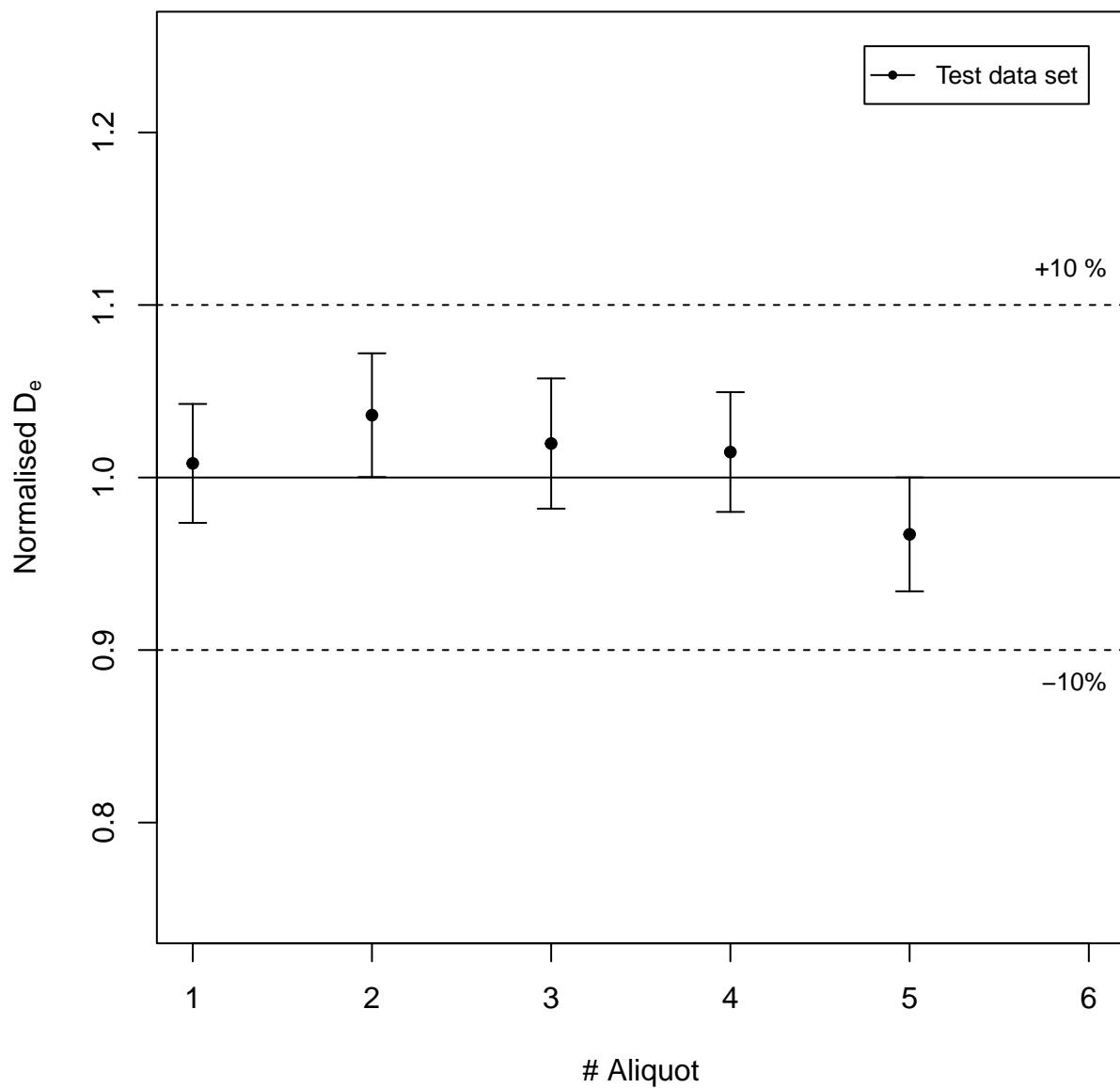
help("plot_DRCSummary")

Dose recovery test

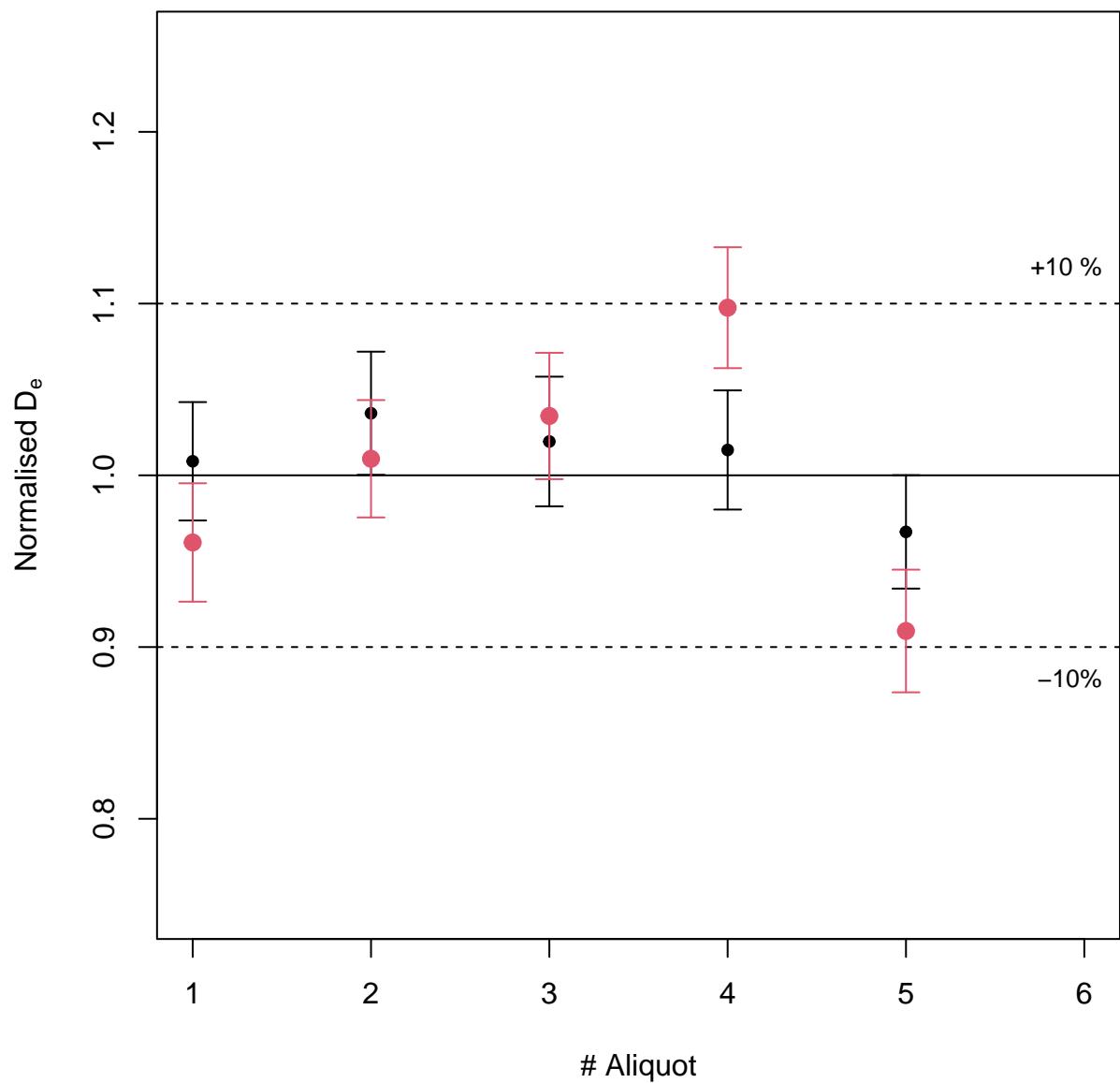
Example data



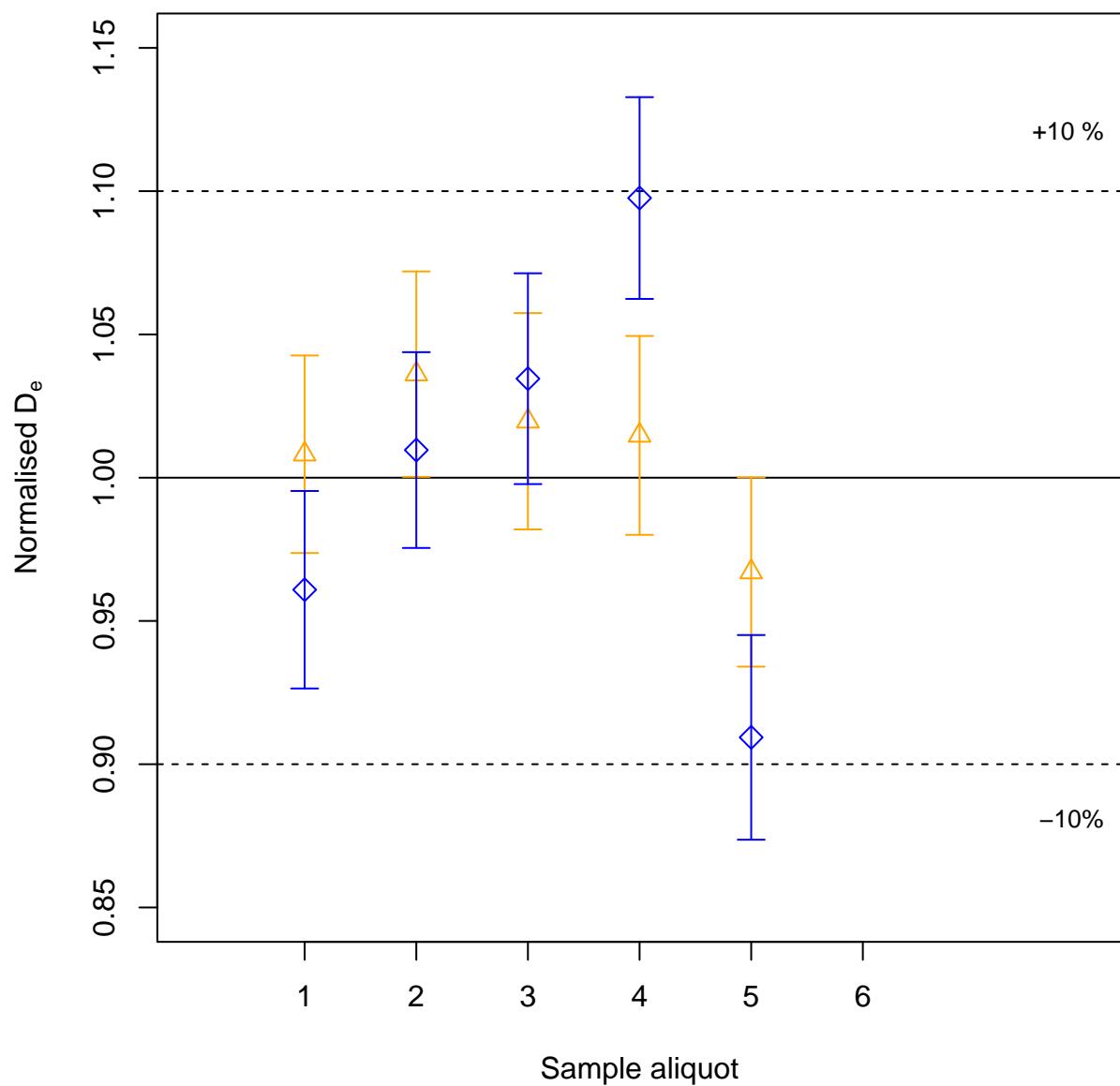
Dose recovery test



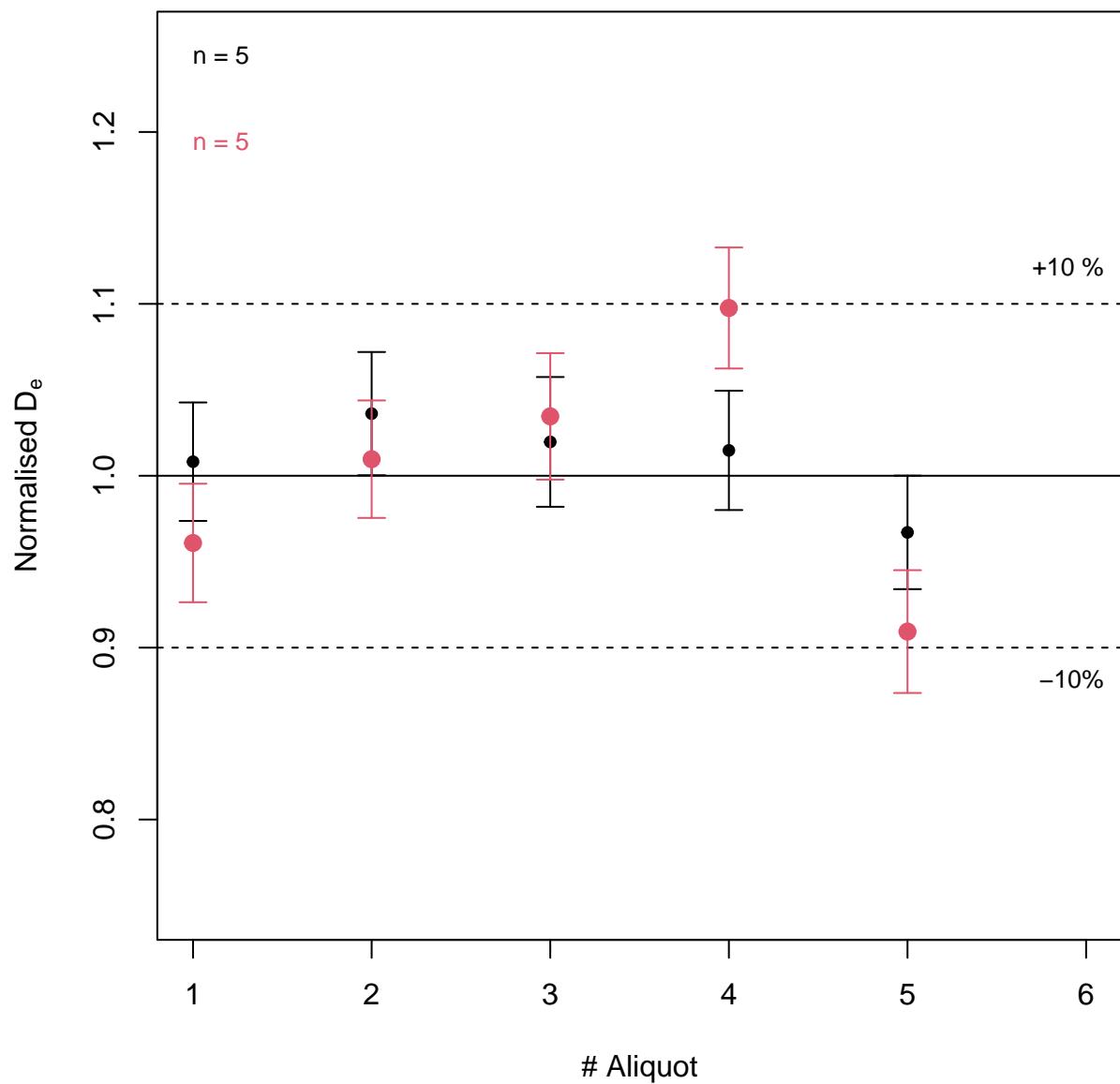
Dose recovery test



Dose recovery test



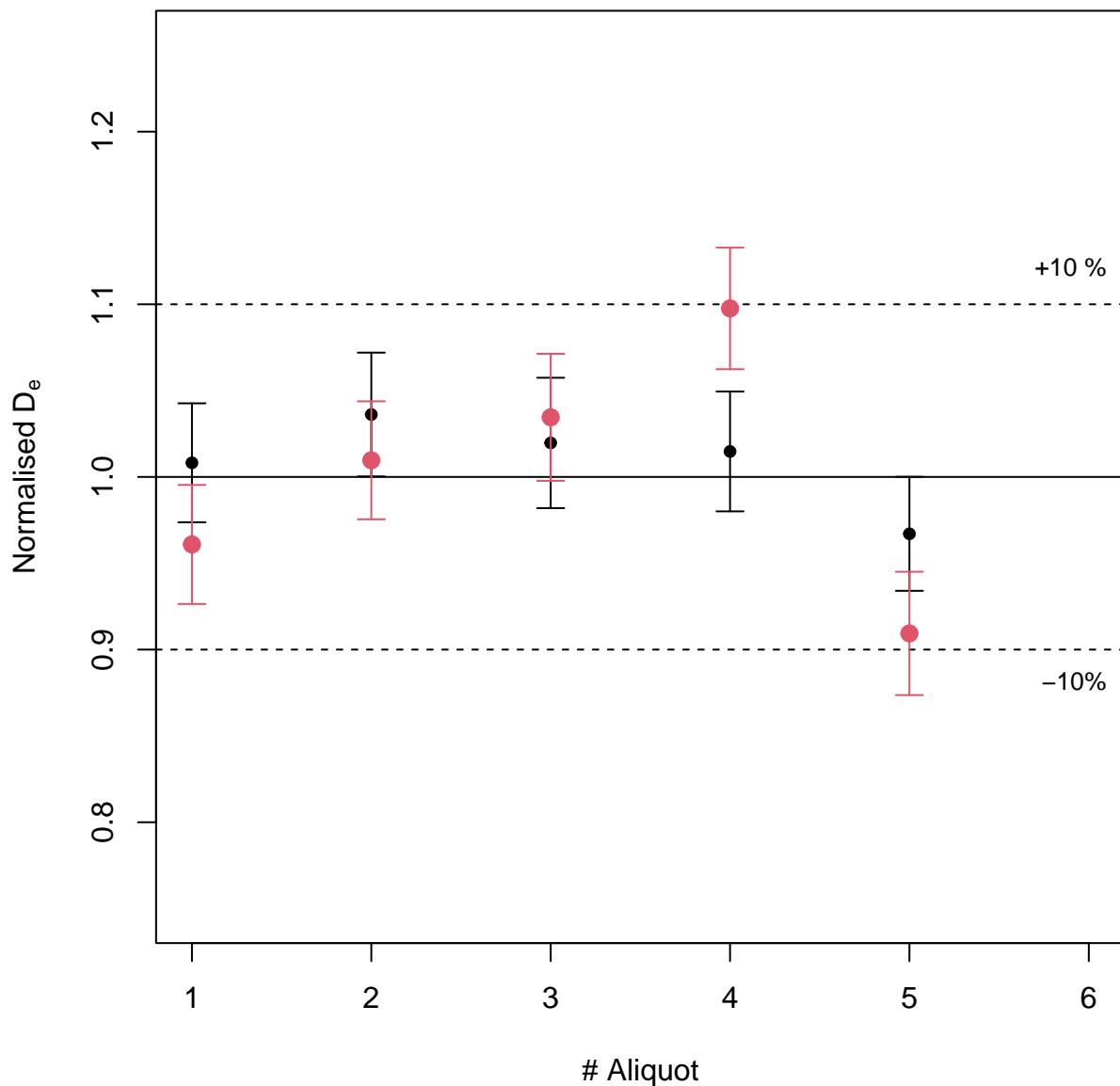
Dose recovery test



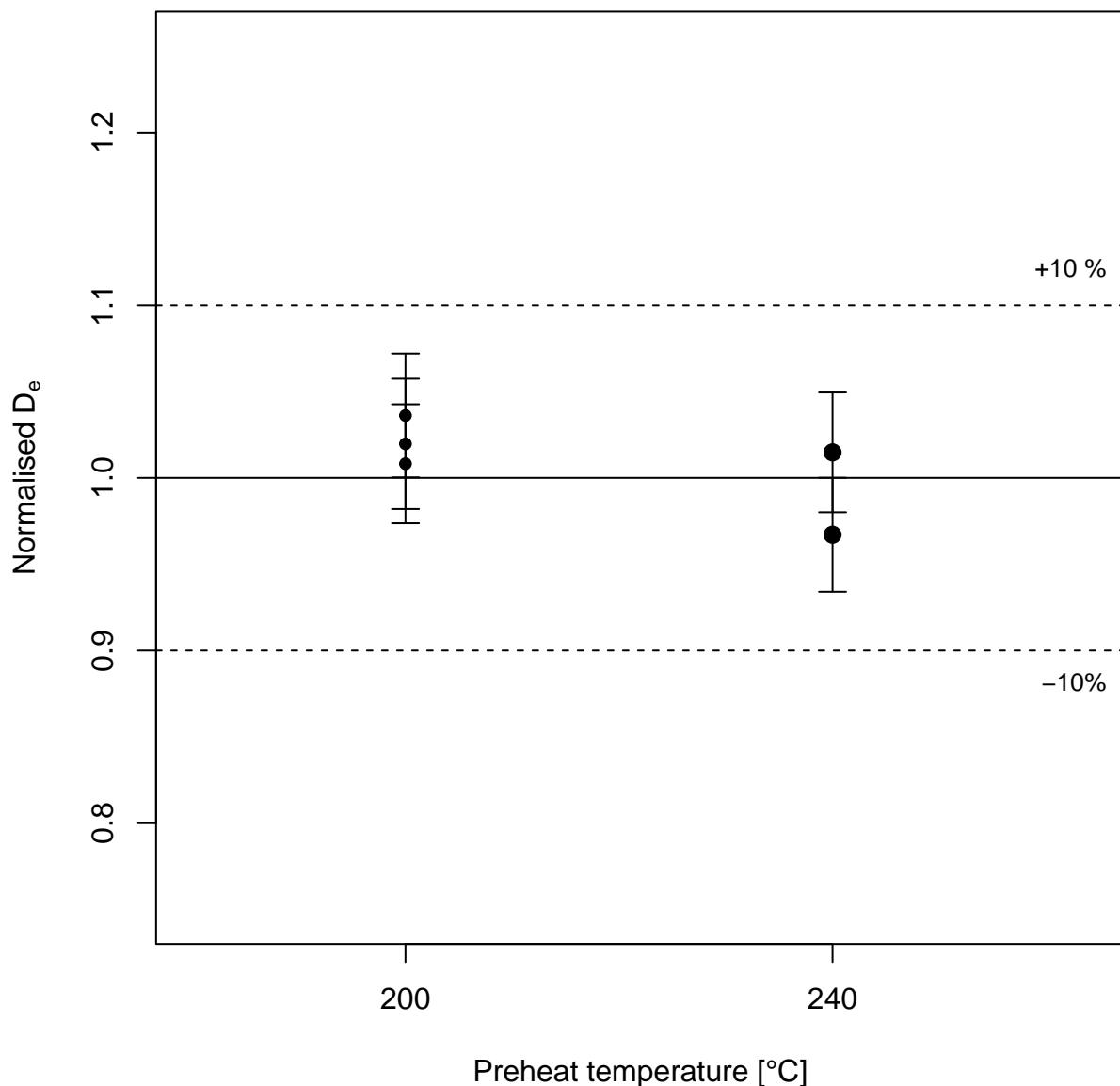
Dose recovery test

n = 5

n = 5

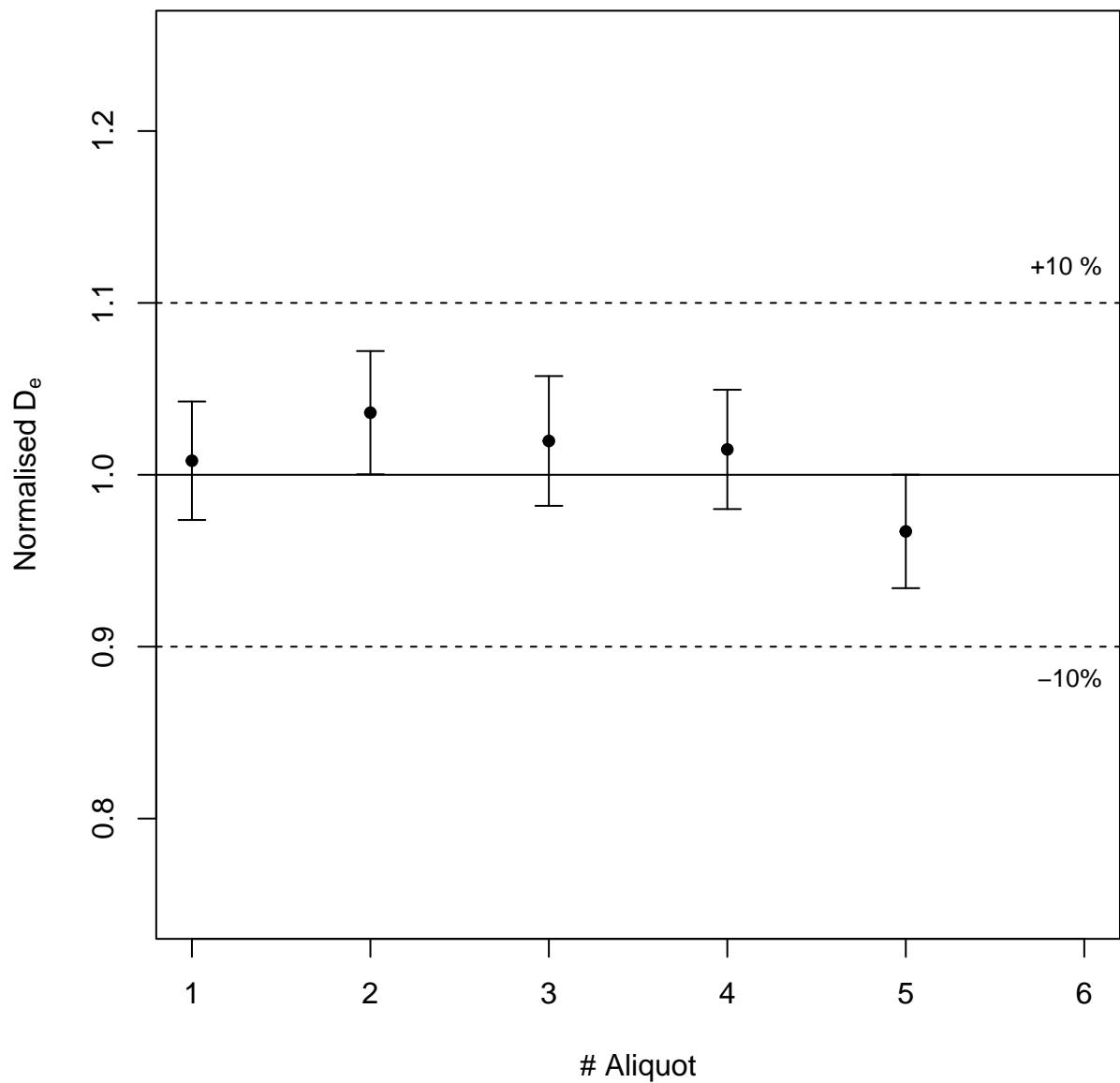


Dose recovery test

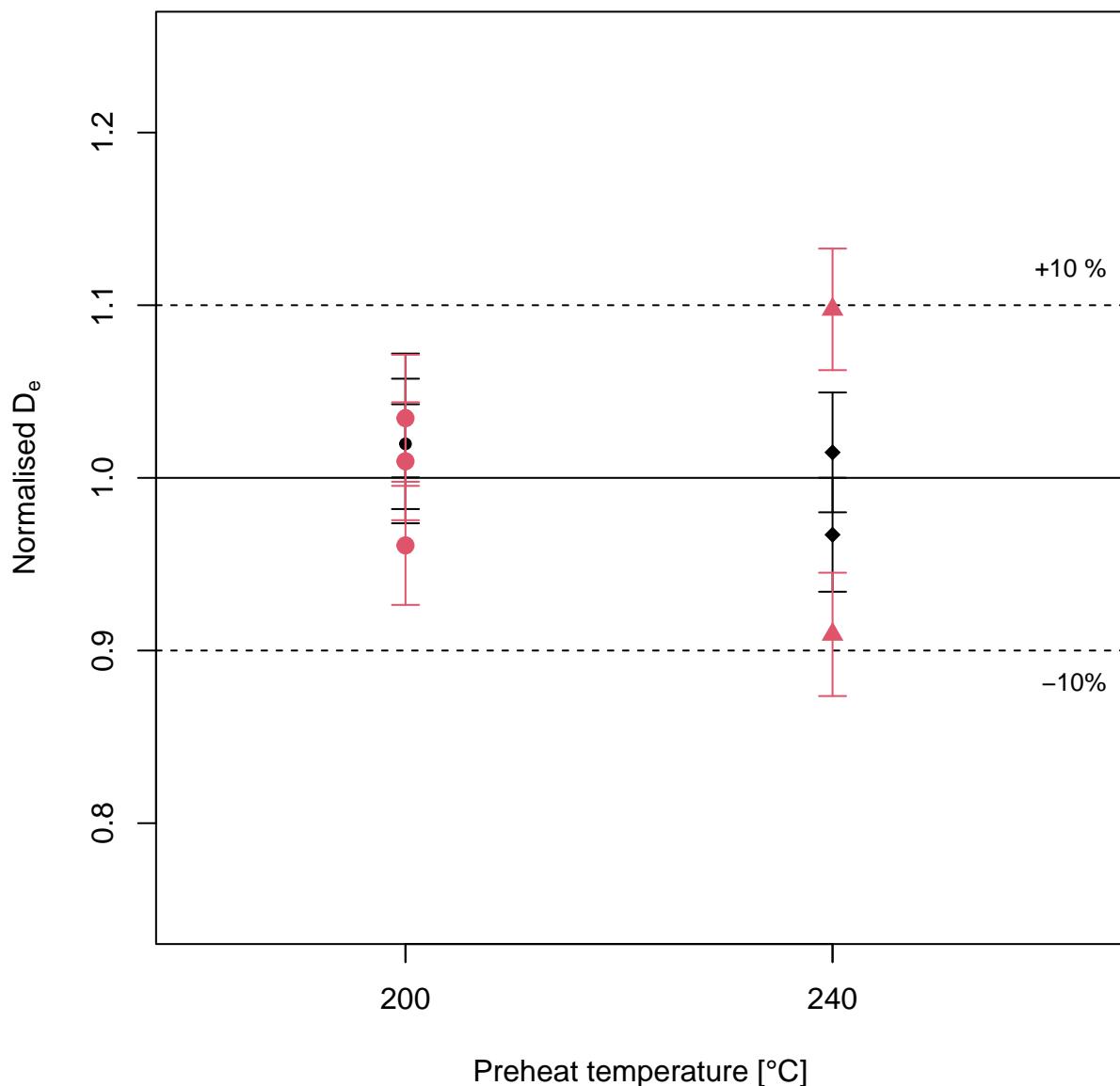


Dose recovery test

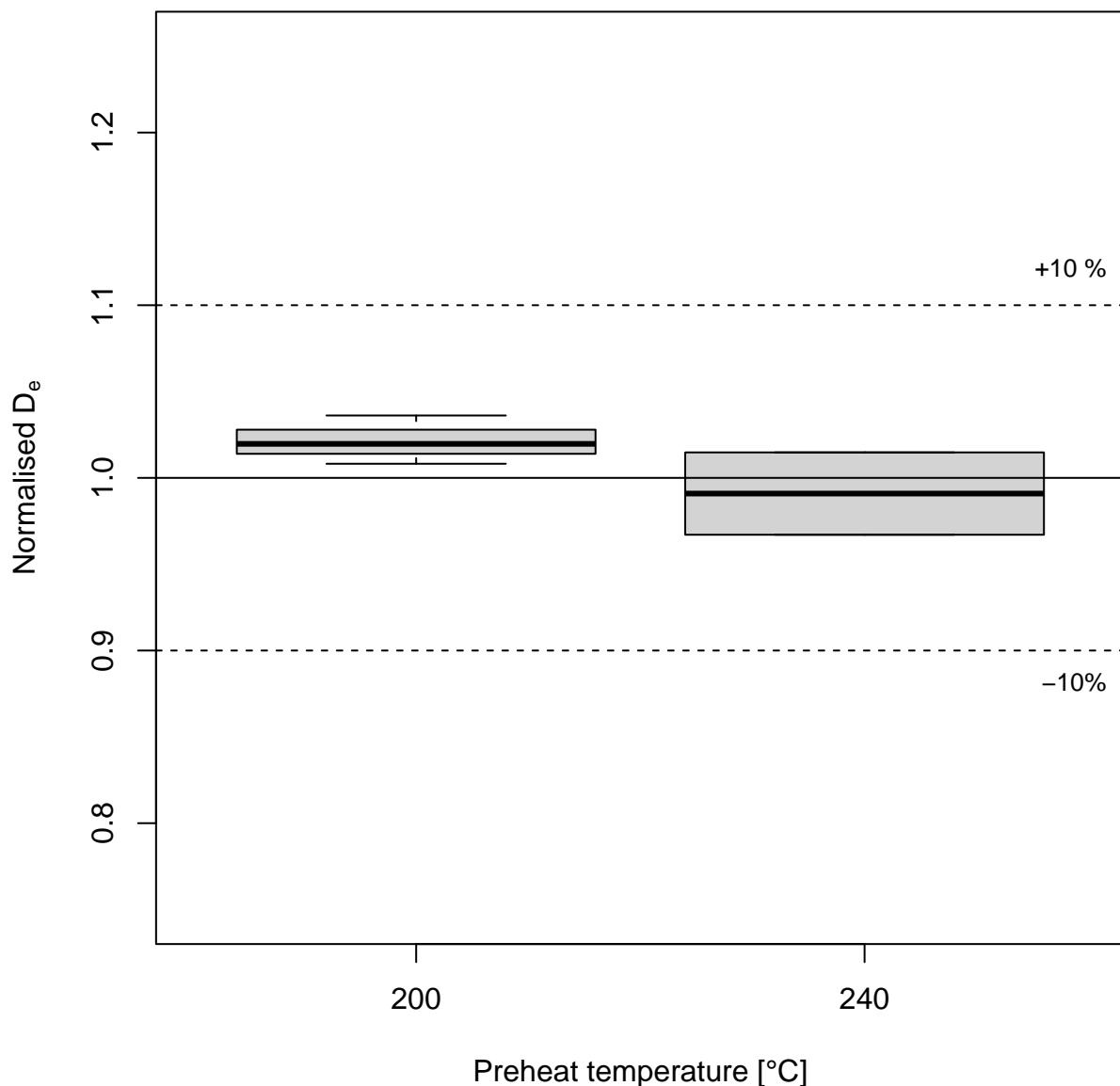
Example data



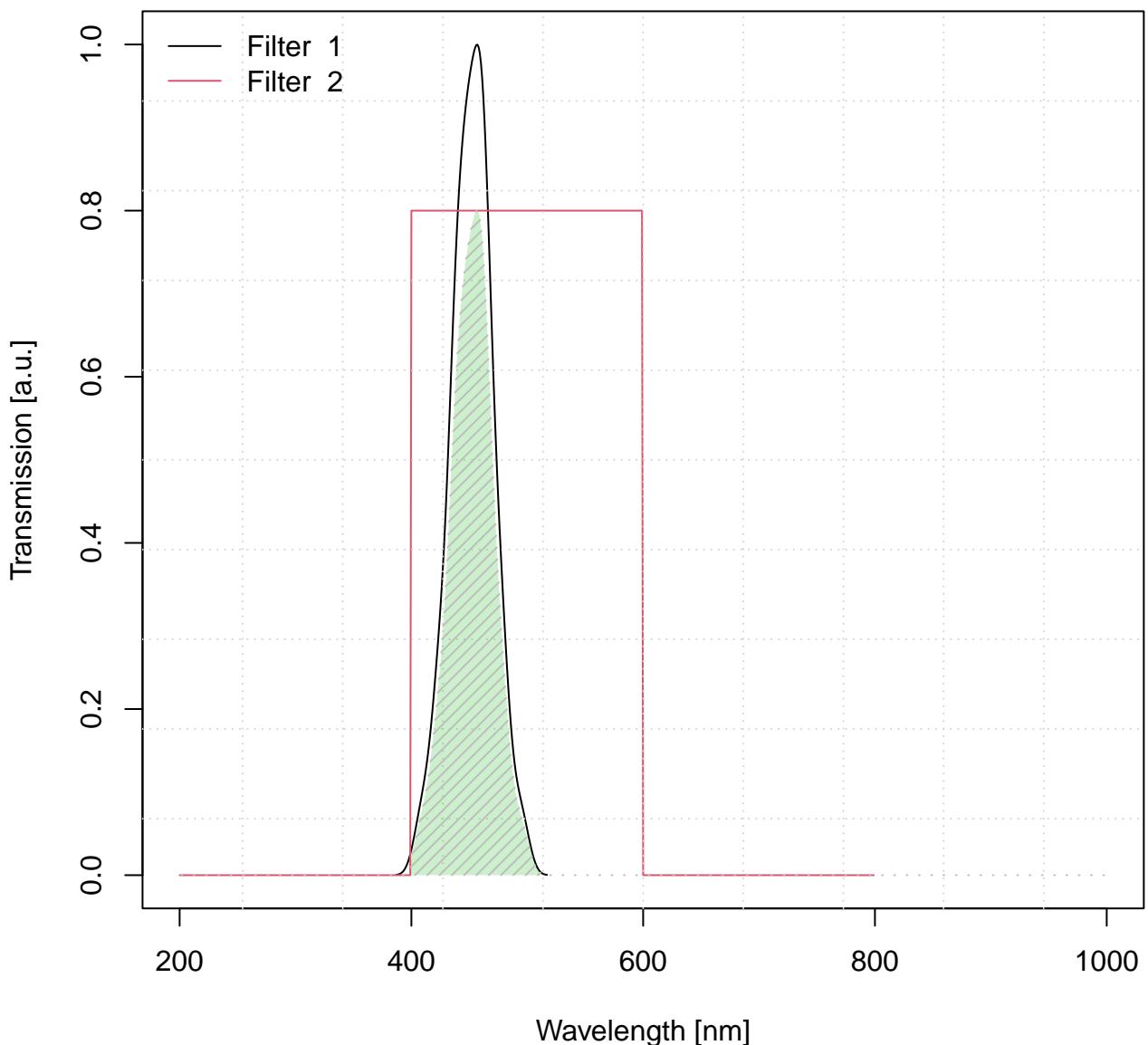
Dose recovery test



Dose recovery test

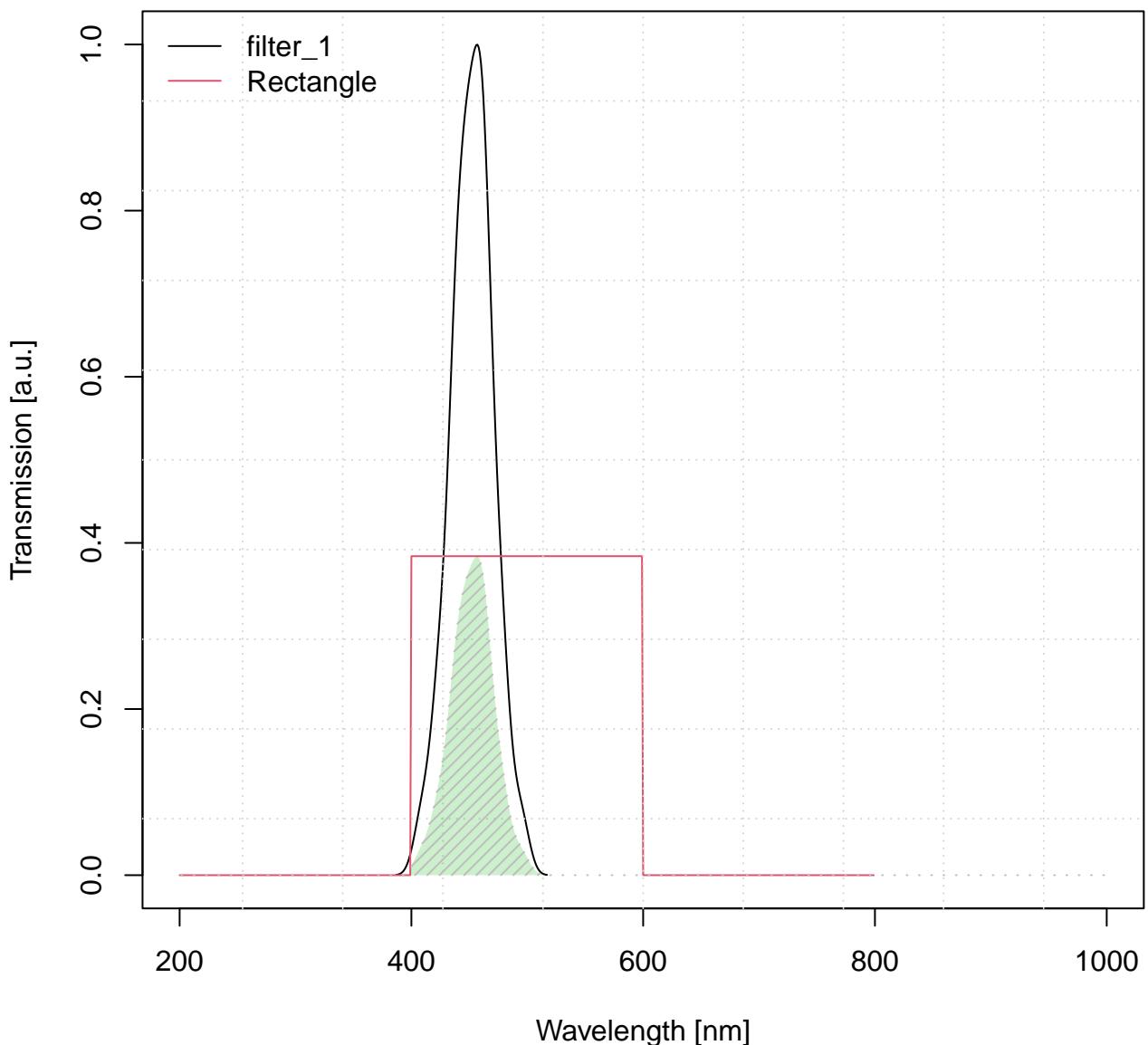


Filter Combination



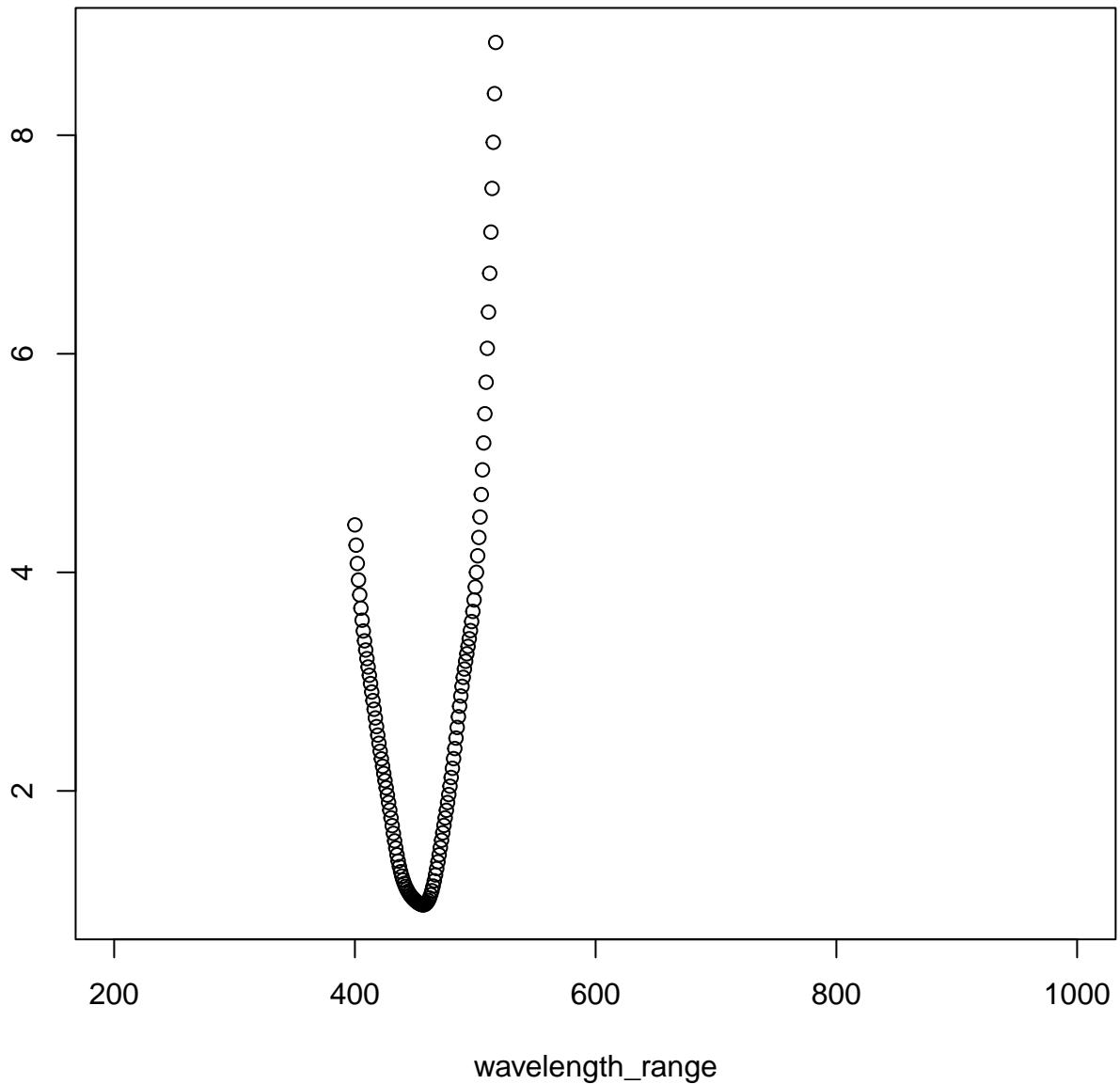
help("plot_FilterCombinations")

Filter Combination



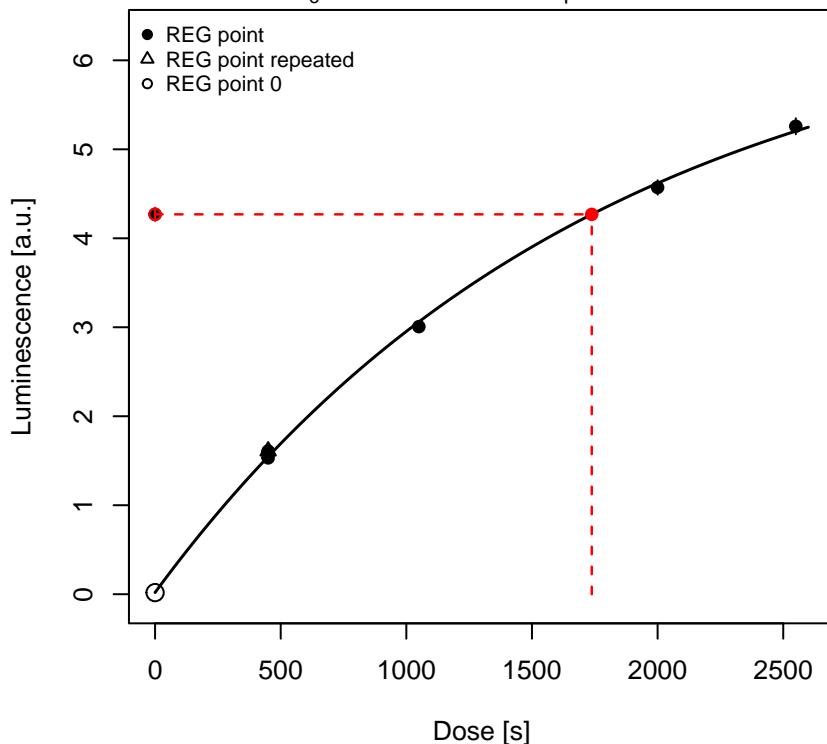
help("plot_FilterCombinations")

help("plot_FilterCombinations")

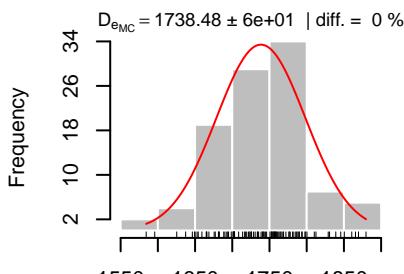


Dose-response curve

$D_e = 1737.88 \pm 6e+01$ | fit: EXP

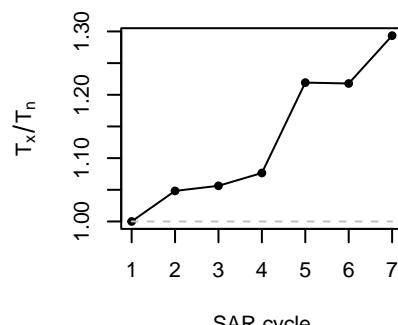


MC runs

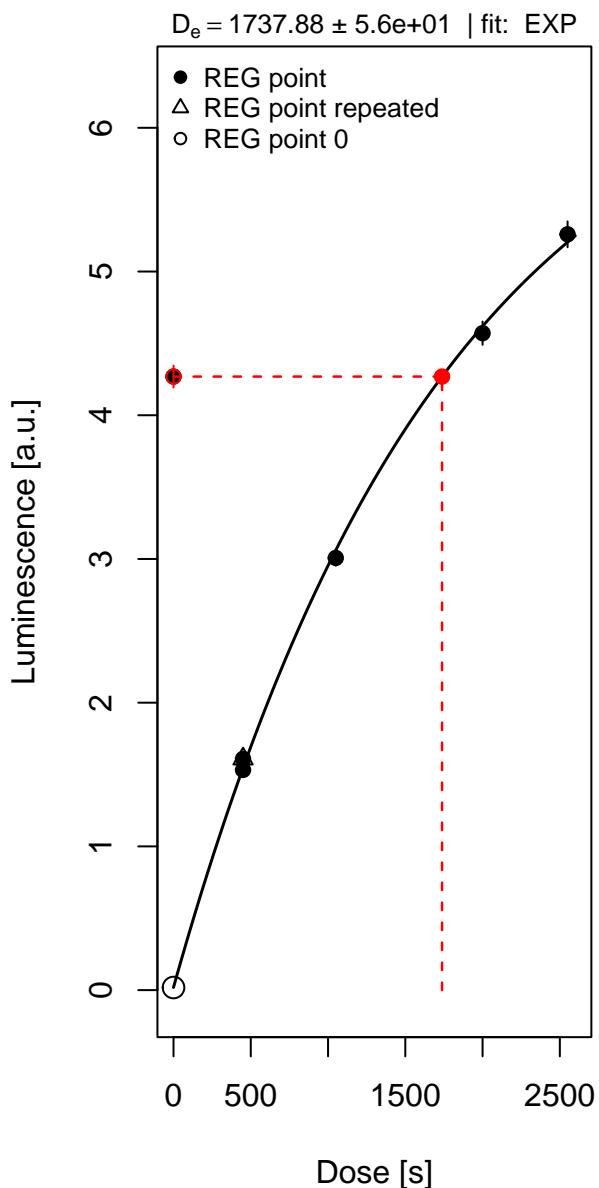


Dose [s]
valid fits = 100/100

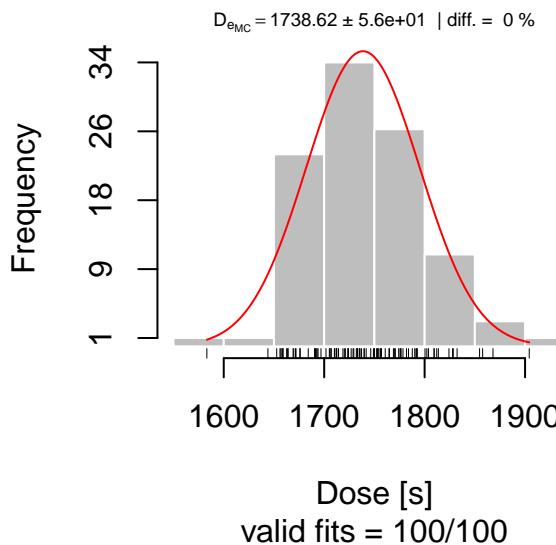
Test-dose response



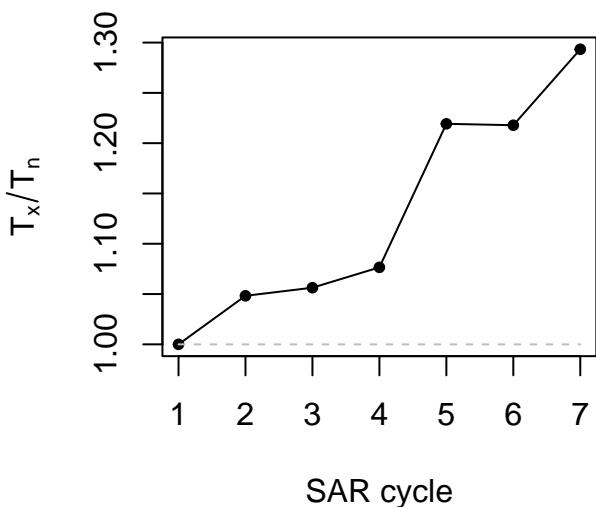
Dose-response curve



MC runs



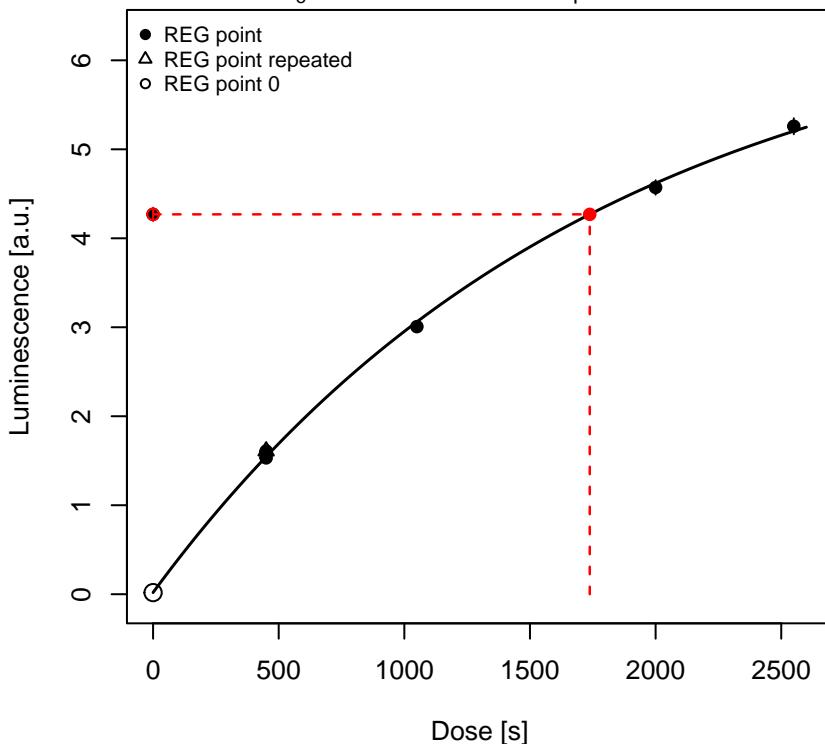
Test-dose response



help("plot_GrowthCurve")

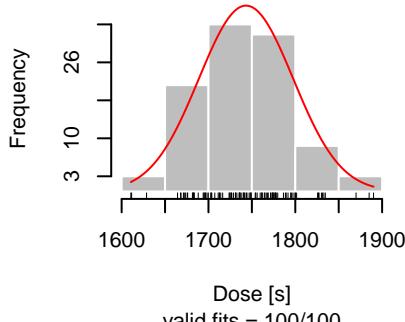
Dose-response curve

$D_e = 1737.88 \pm 5.4e+01$ | fit: EXP

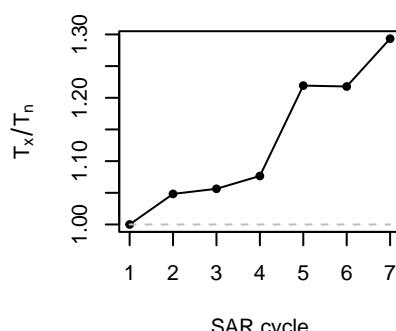


MC runs

$D_{e_{MC}} = 1743.26 \pm 5.4e+01$ | diff. = 0.3 %

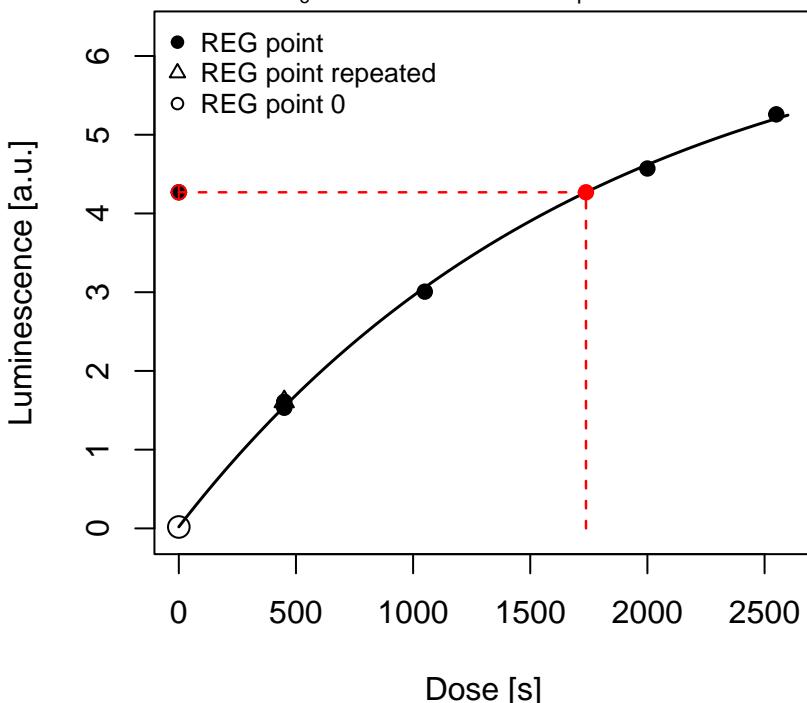


Test-dose response

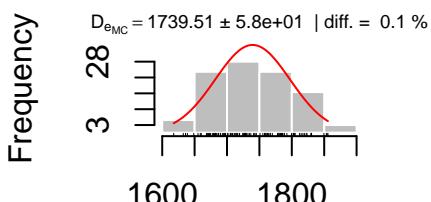


Dose-response curve

$D_e = 1737.88 \pm 5.8e+01$ | fit: EXP

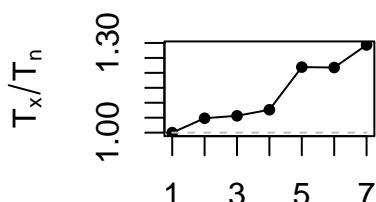


MC runs

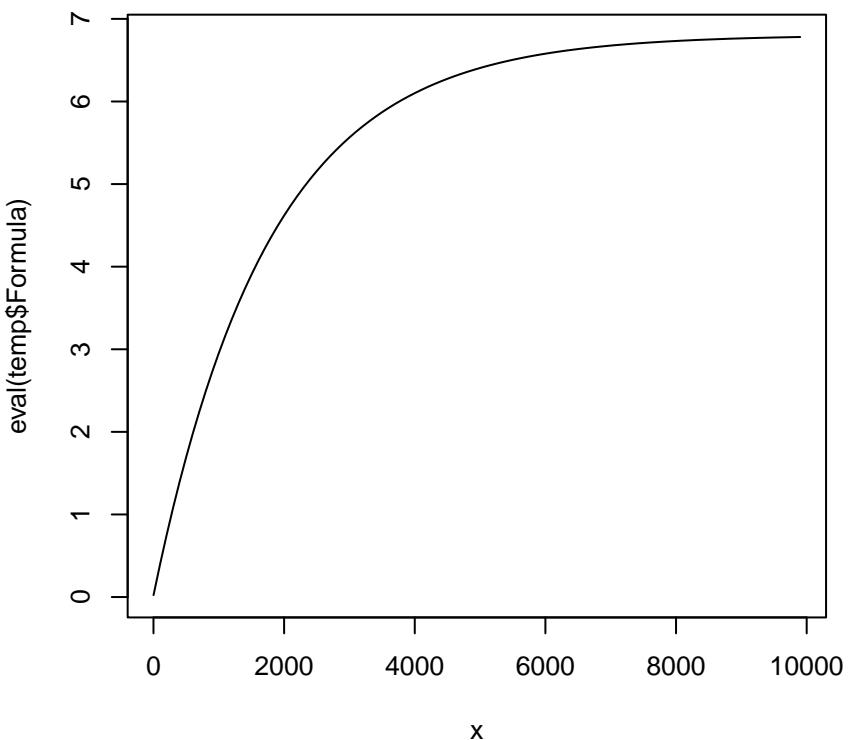


Dose [s]
valid fits = 100/100

Test-dose response

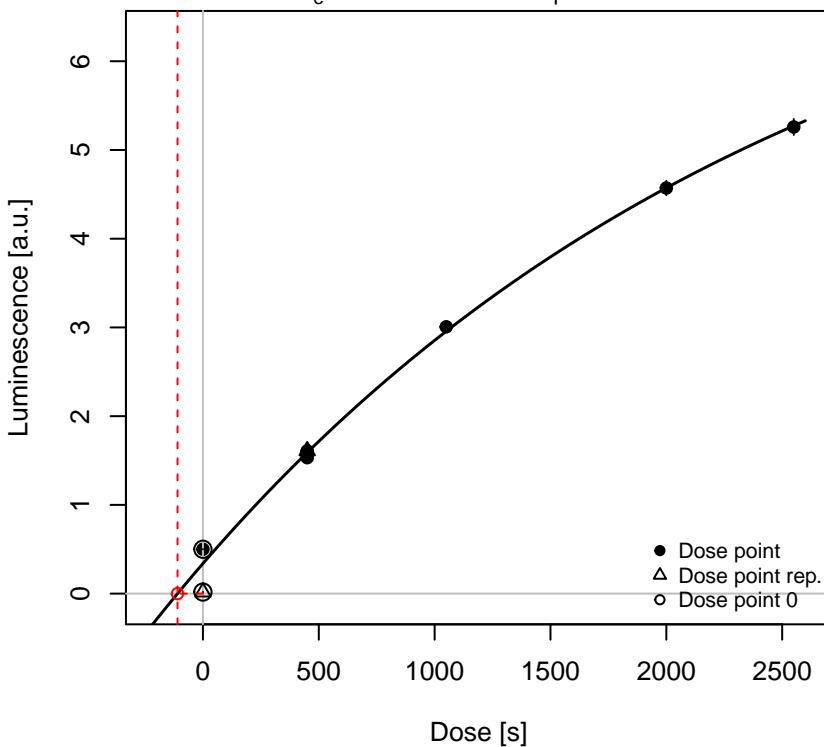


SAR cycle



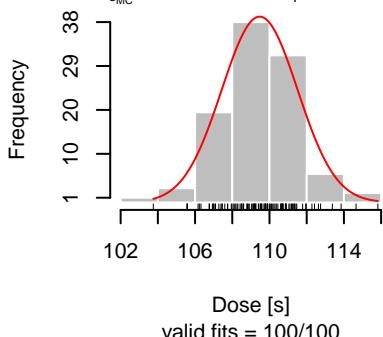
Dose-response curve

$D_e = 109.74 \pm 2e+00$ | fit: EXP



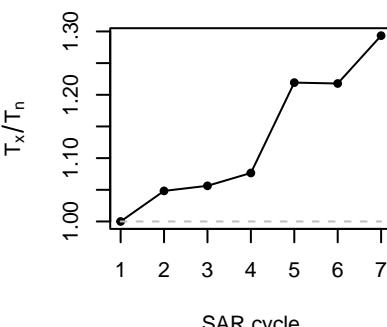
MC runs

$D_{eMC} = 109.47 \pm 2e+00$ | diff. = 0.2 %

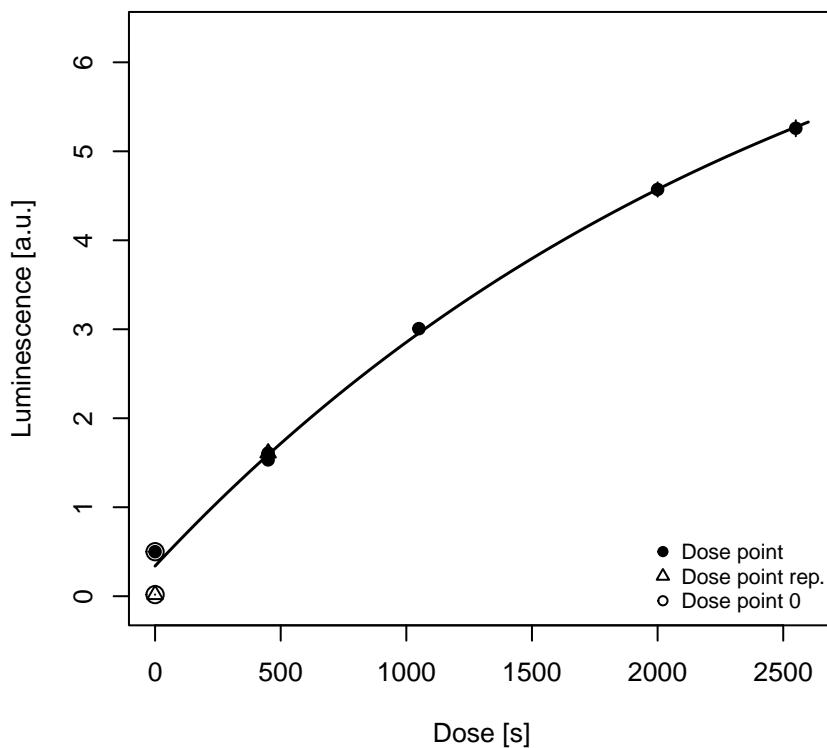


Dose [s]
valid fits = 100/100

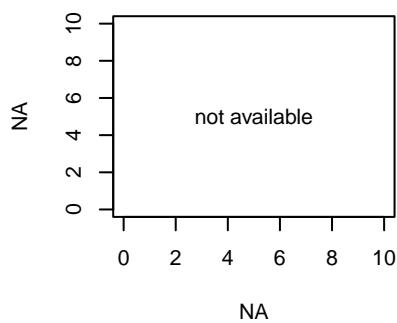
Test-dose response



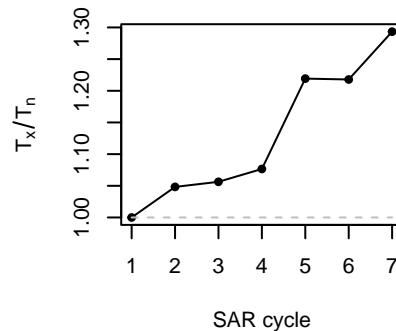
Dose-response curve



D_e from MC runs

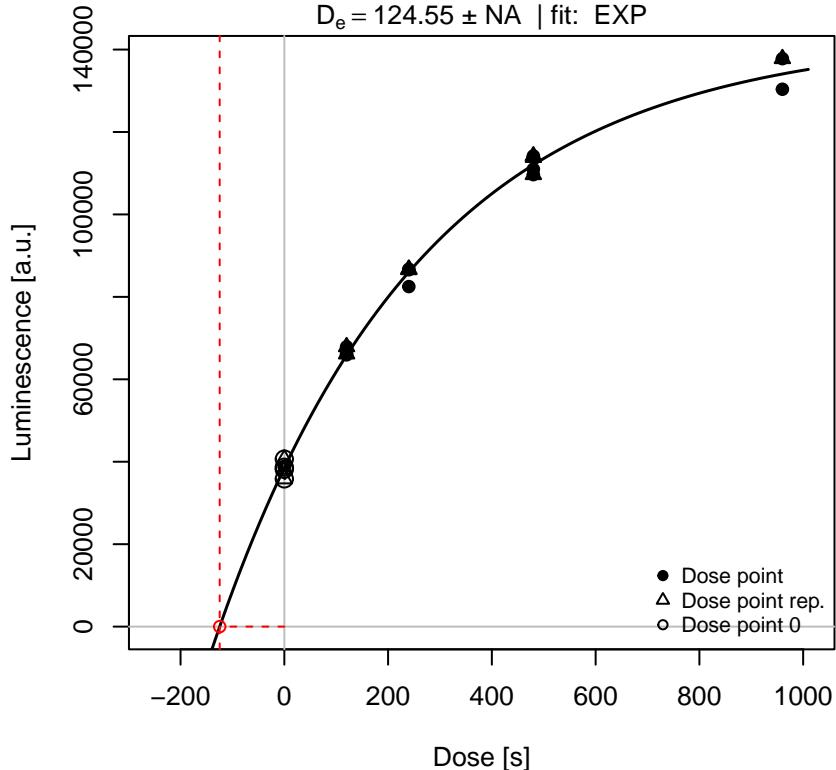


Test-dose response

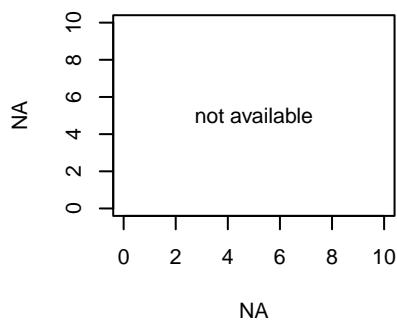


Dose-response curve

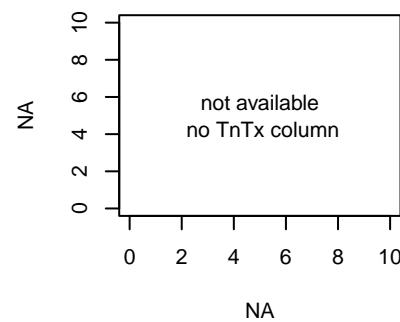
$D_e = 124.55 \pm \text{NA}$ | fit: EXP



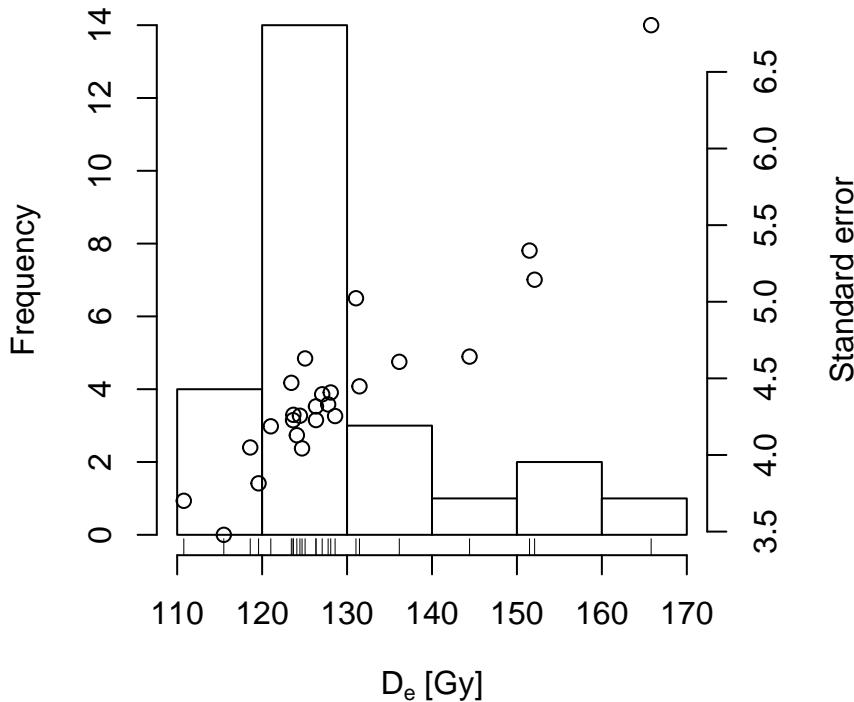
D_e from MC runs



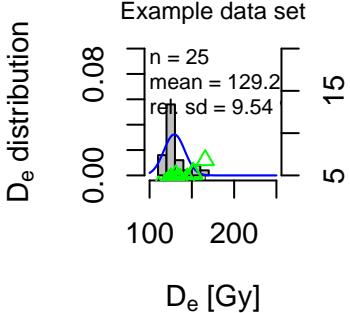
Test-dose response



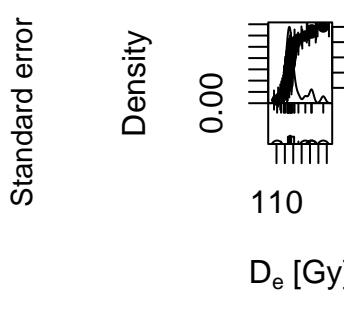
Histogram



Histogram of D_e -values

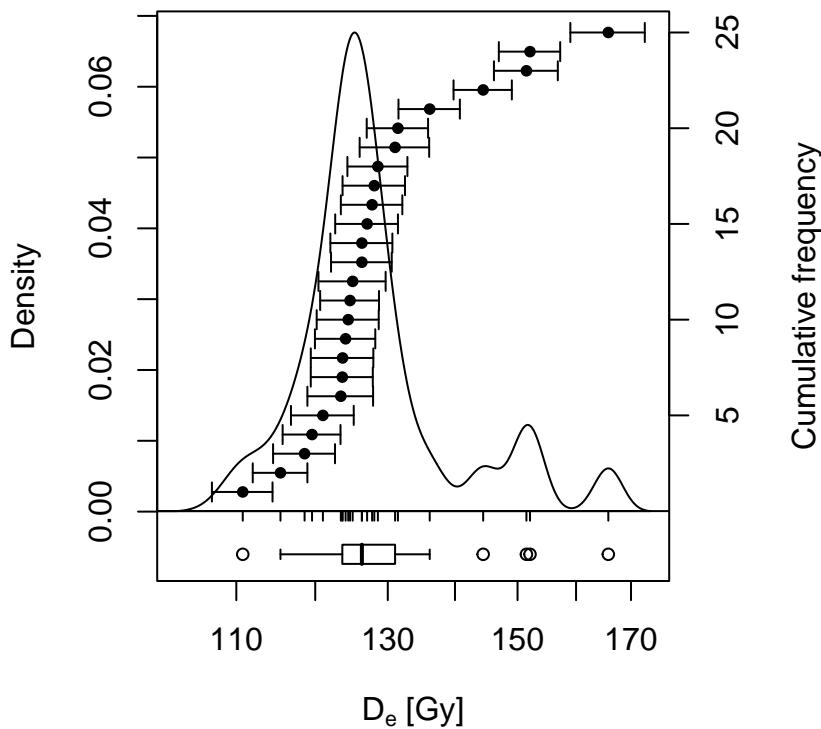


D_e distribution

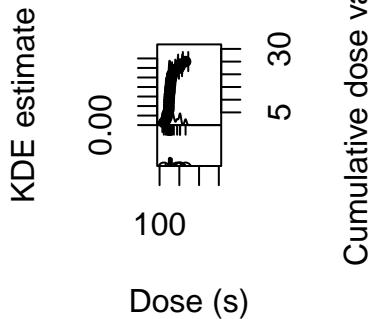


Cumulative frequency

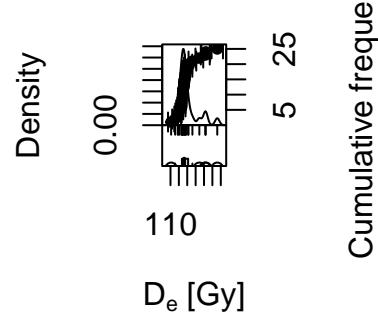
D_e distribution



Dose distribution

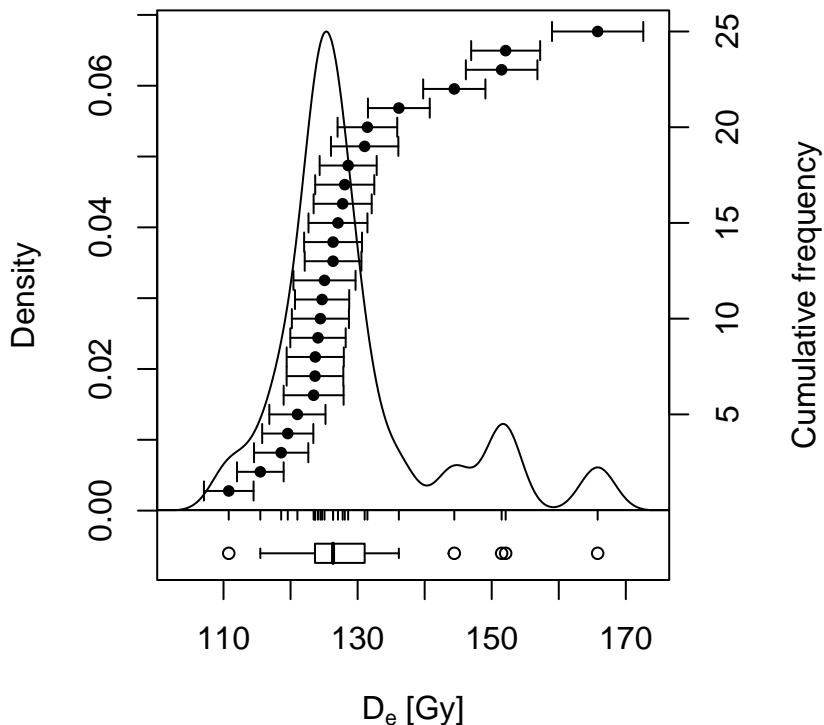


D_e distribution

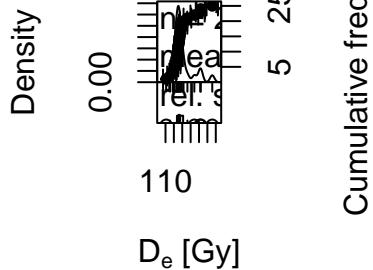


D_e distribution

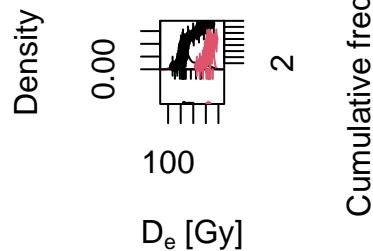
n = 25 | median = 126.34 | skewness = 1.34 | in 2 sigma = 96 %



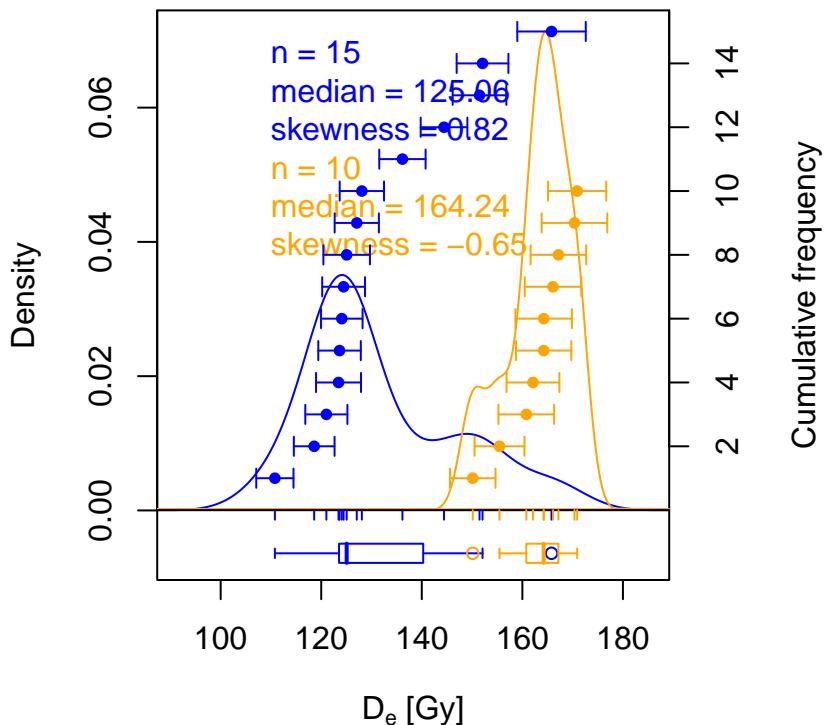
D_e distribution



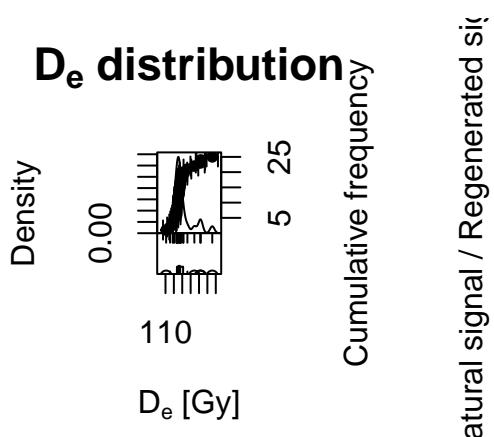
D_e distribution



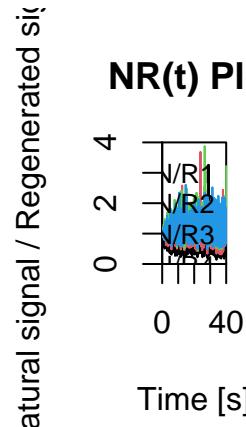
D_e distribution



D_e distribution

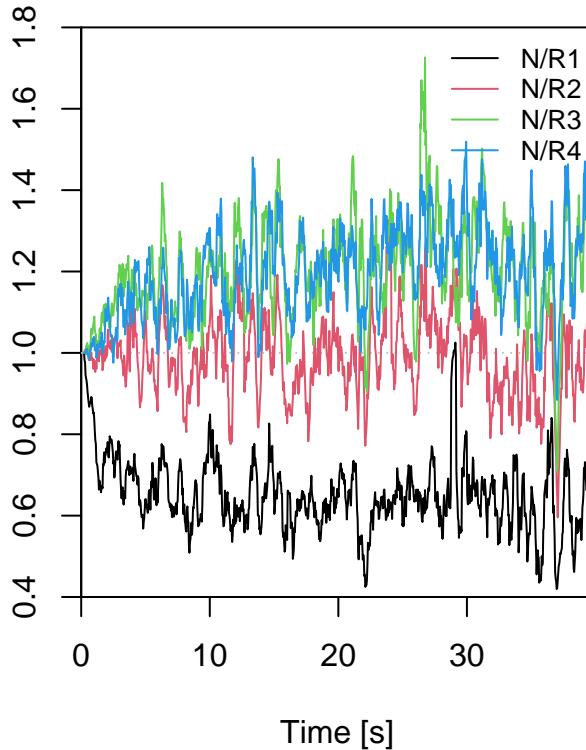


NR(t) Plot

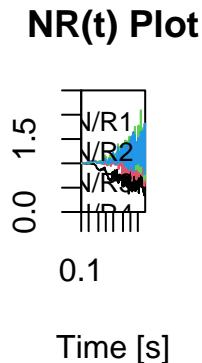


NR(t) Plot

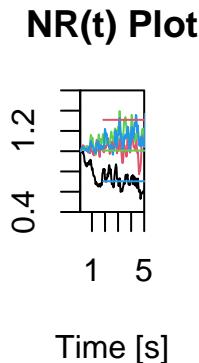
Natural signal / Regenerated signal



Natural signal / Regenerated signal

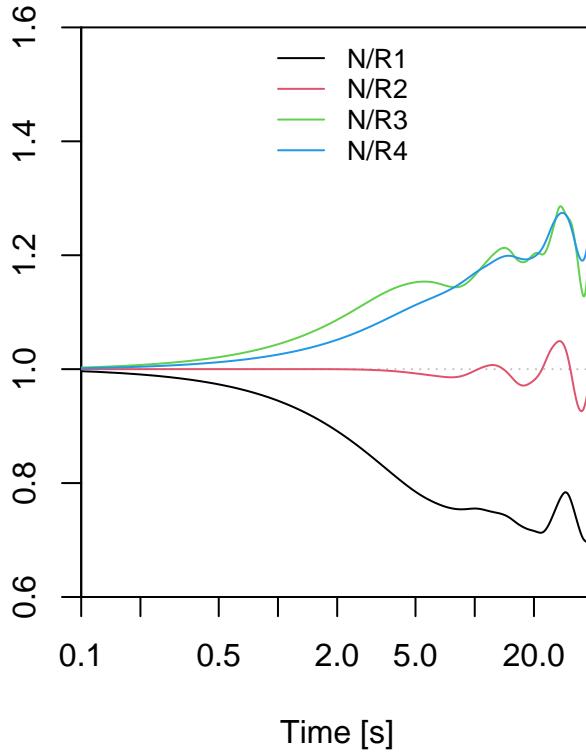


Natural signal / Regenerated signal



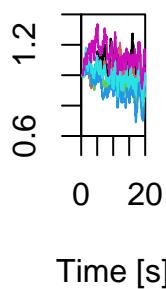
NR(t) Plot

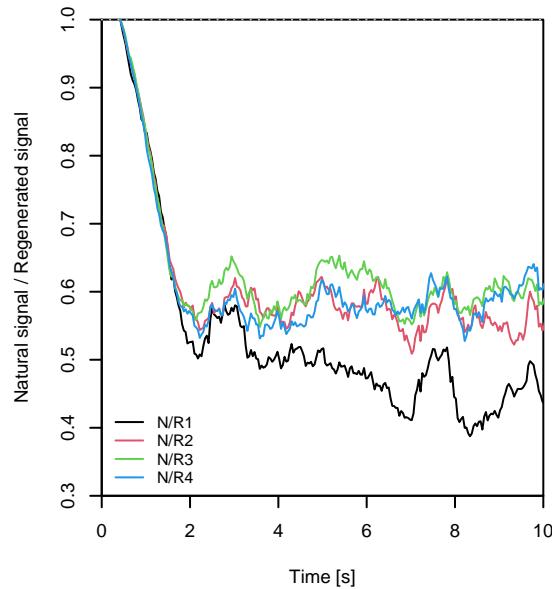
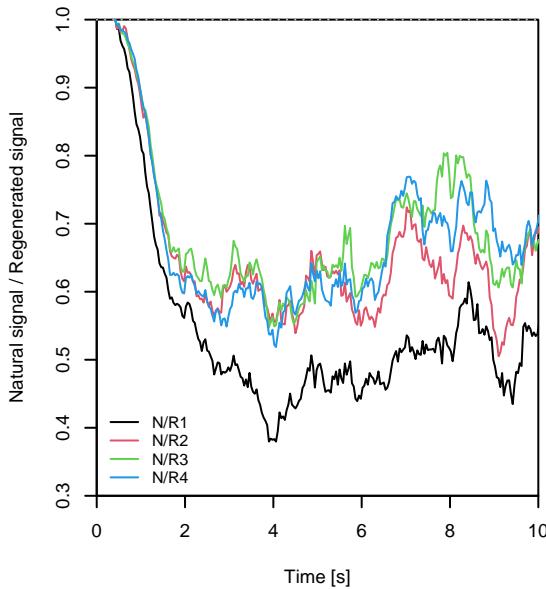
Natural signal / Regenerated signal



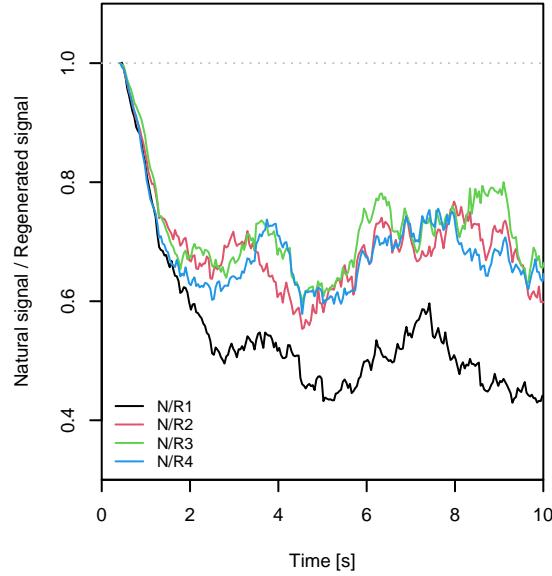
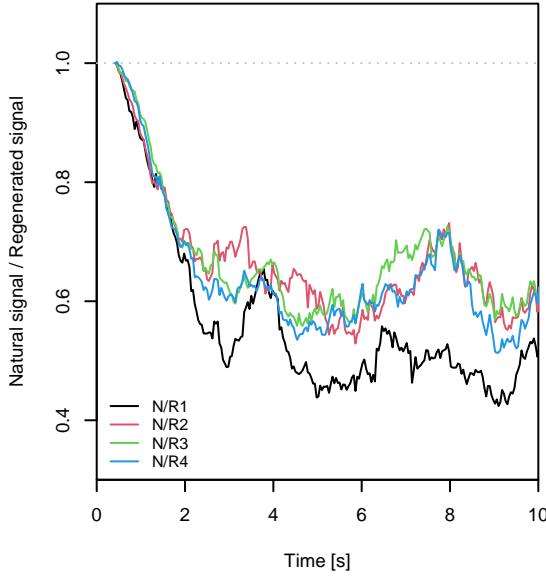
TnTx(t) Plot

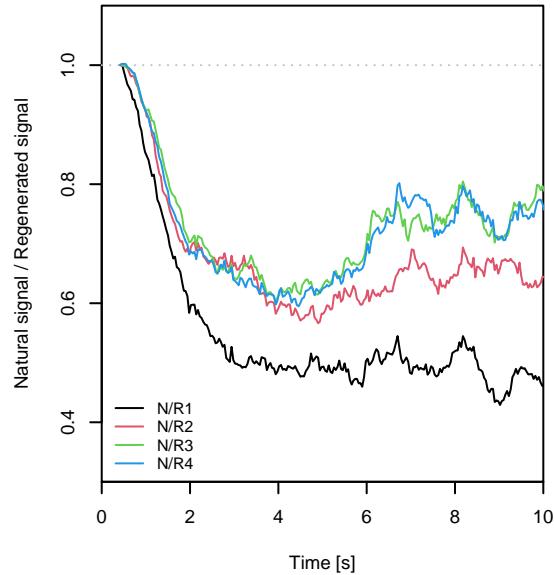
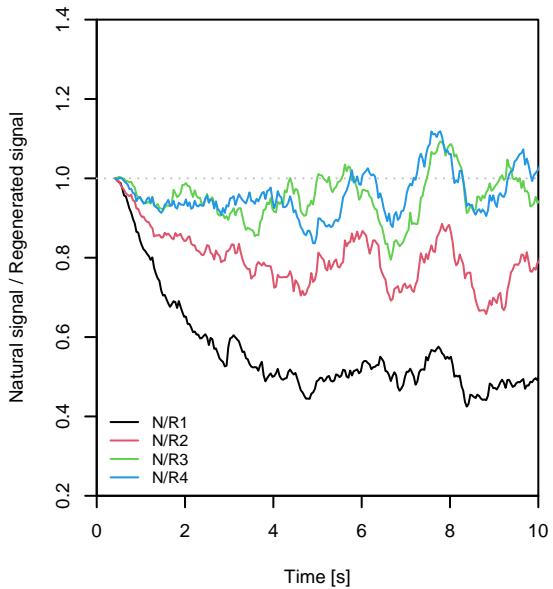
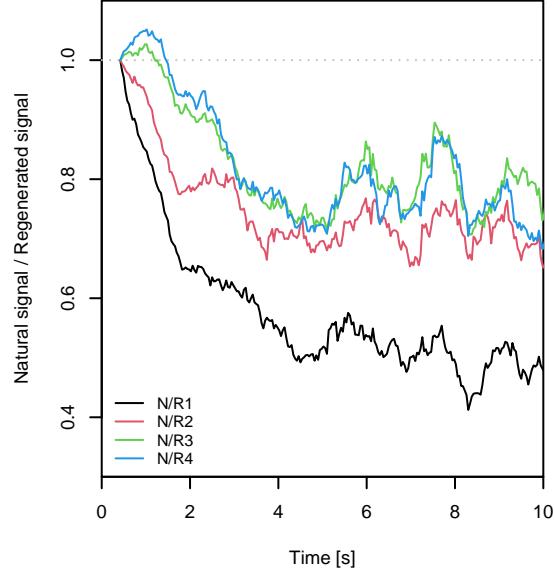
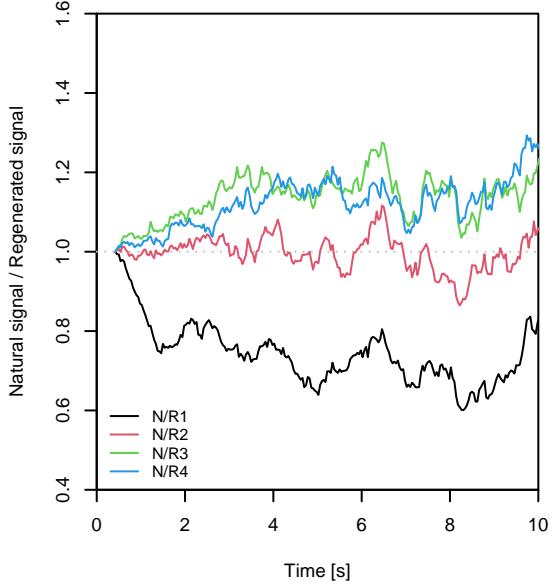
TD natural / TD regenerated



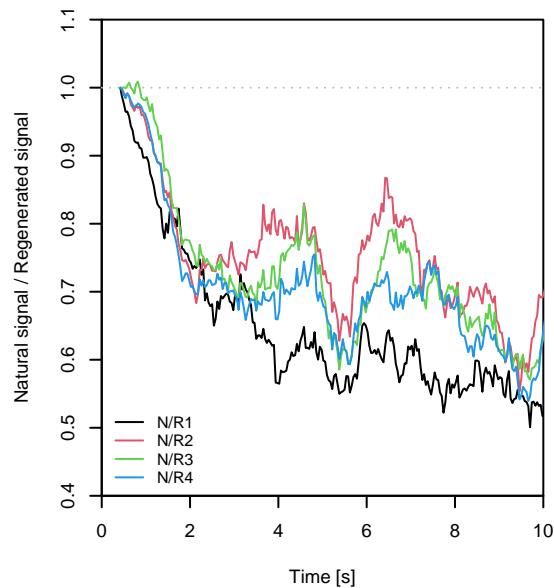
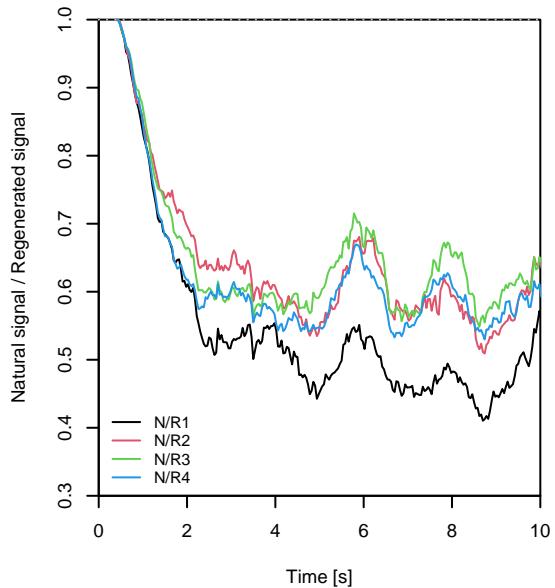
Aliquot #1**Aliquot #2**

help("plot_NRt")

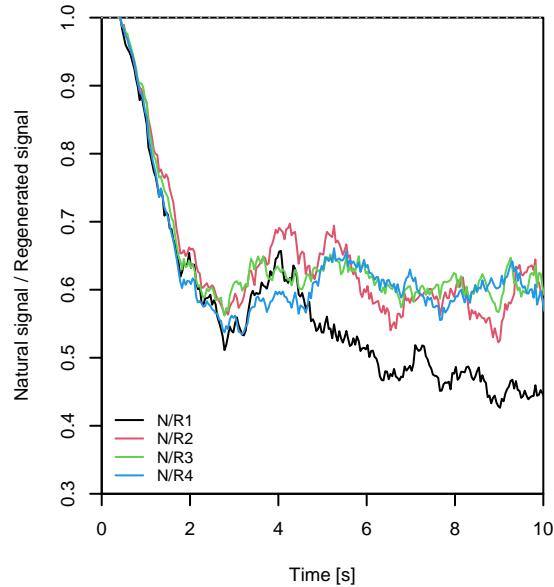
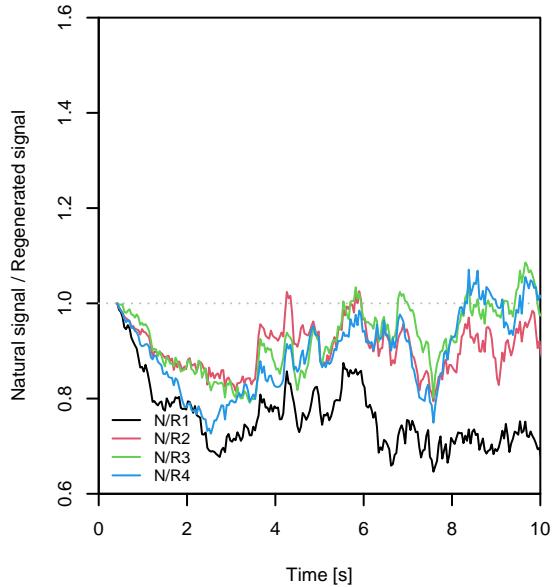
Aliquot #3**Aliquot #4**

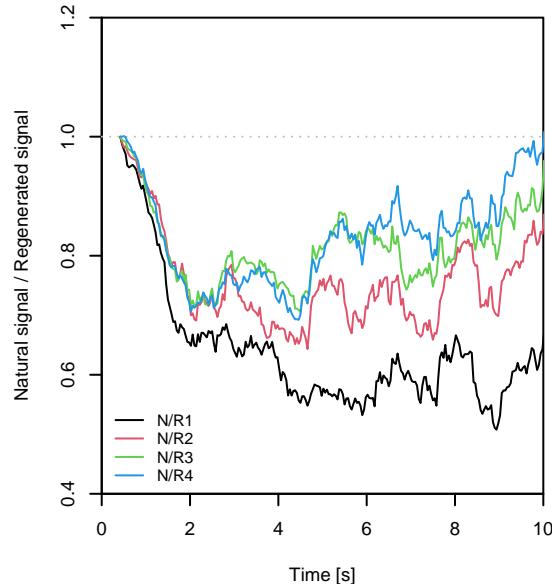
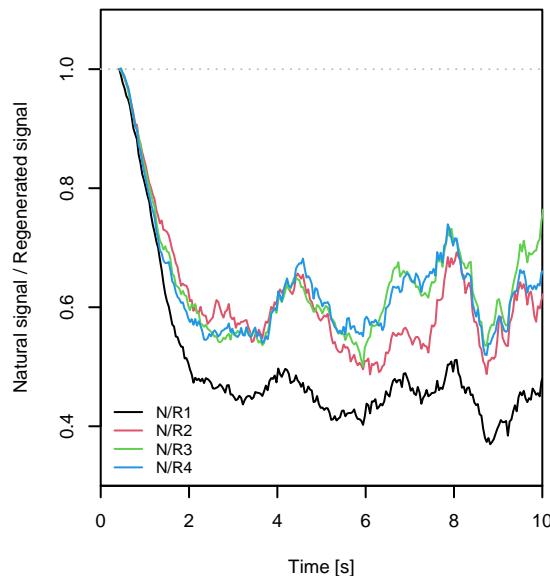
Aliquot #5**Aliquot #6****Aliquot #7****Aliquot #8**

help("plot_NRt")

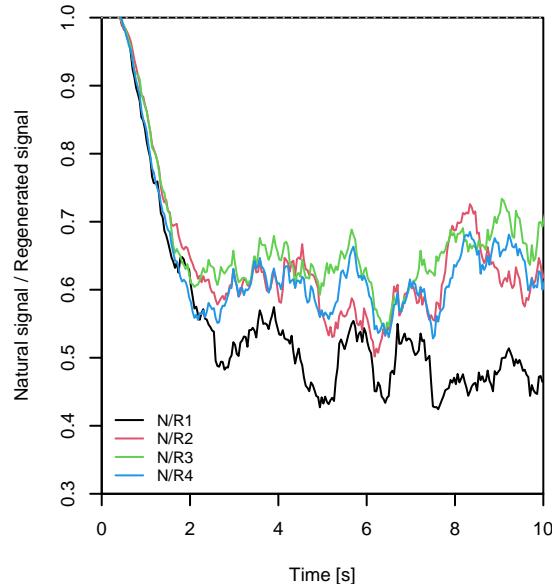
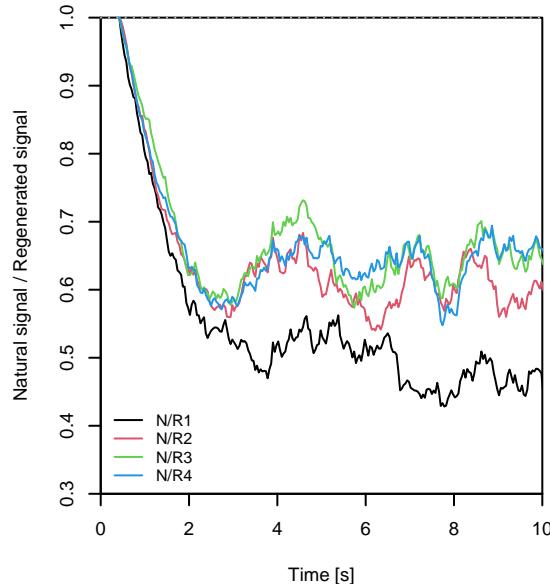
Aliquot #9**Aliquot #10**

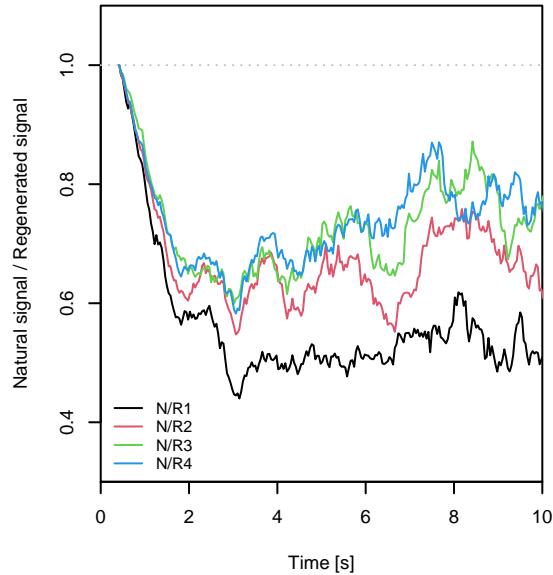
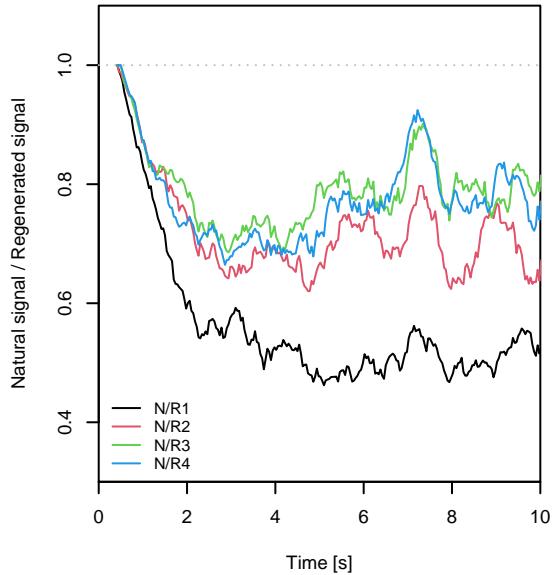
help("plot_NRt")

Aliquot #11**Aliquot #12**

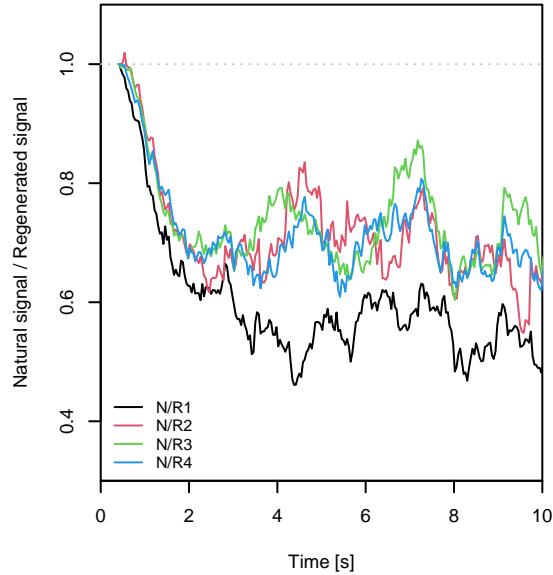
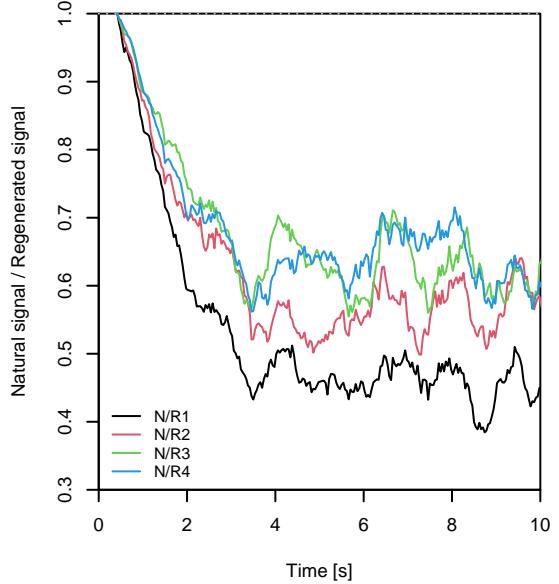
Aliquot #13**Aliquot #14**

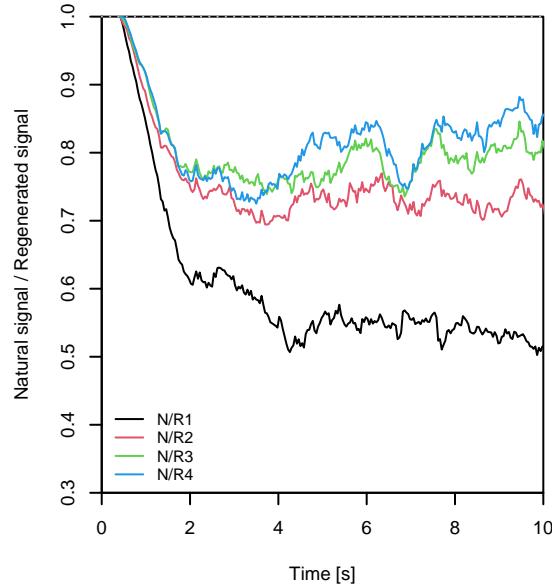
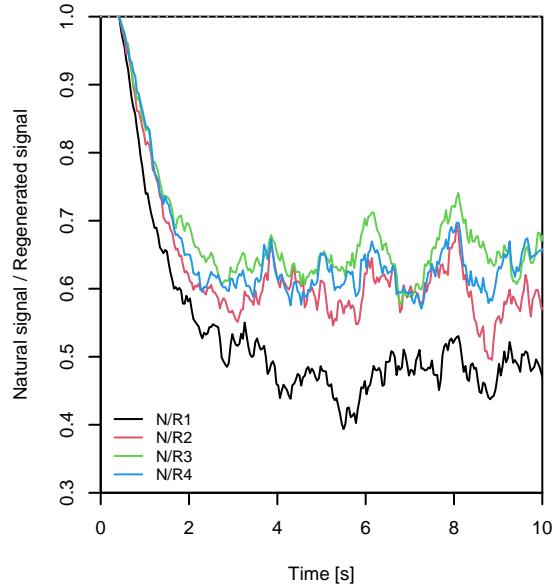
help("plot_NRt")

Aliquot #15**Aliquot #16**

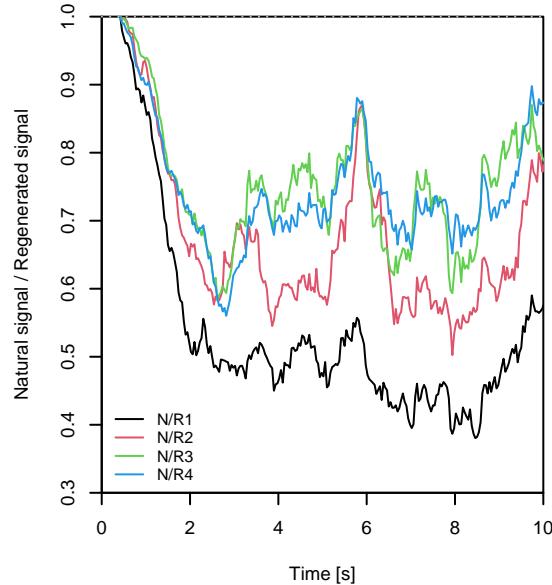
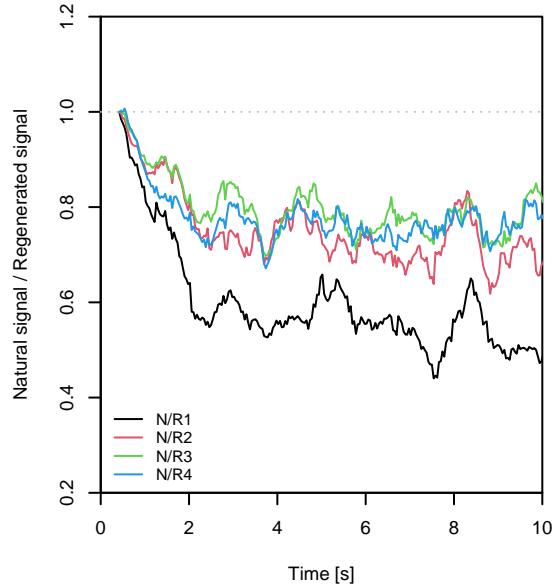
Aliquot #17**Aliquot #18**

help("plot_NRt")

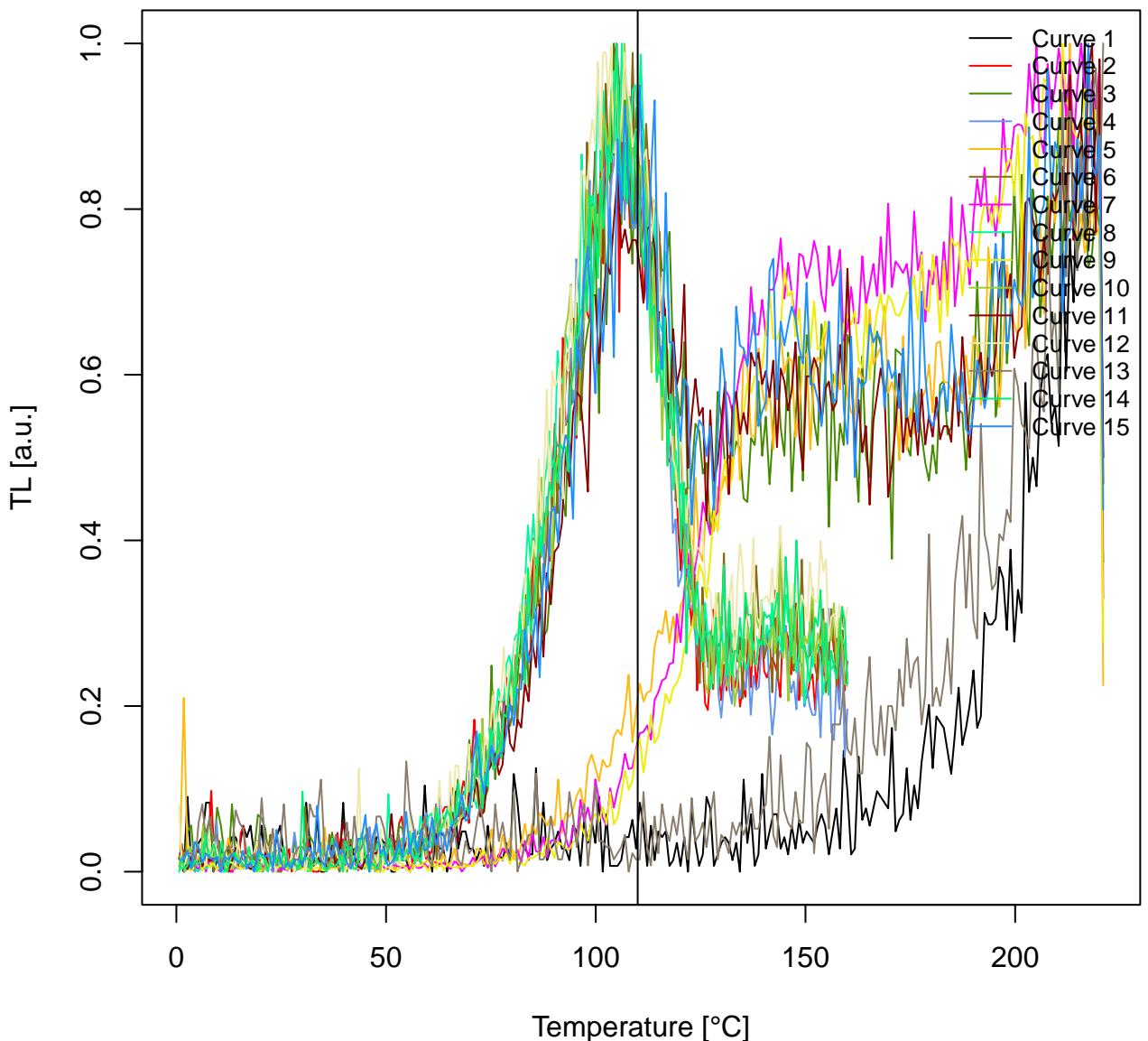
Aliquot #19**Aliquot #20**

Aliquot #21**Aliquot #22**

help("plot_NRt")

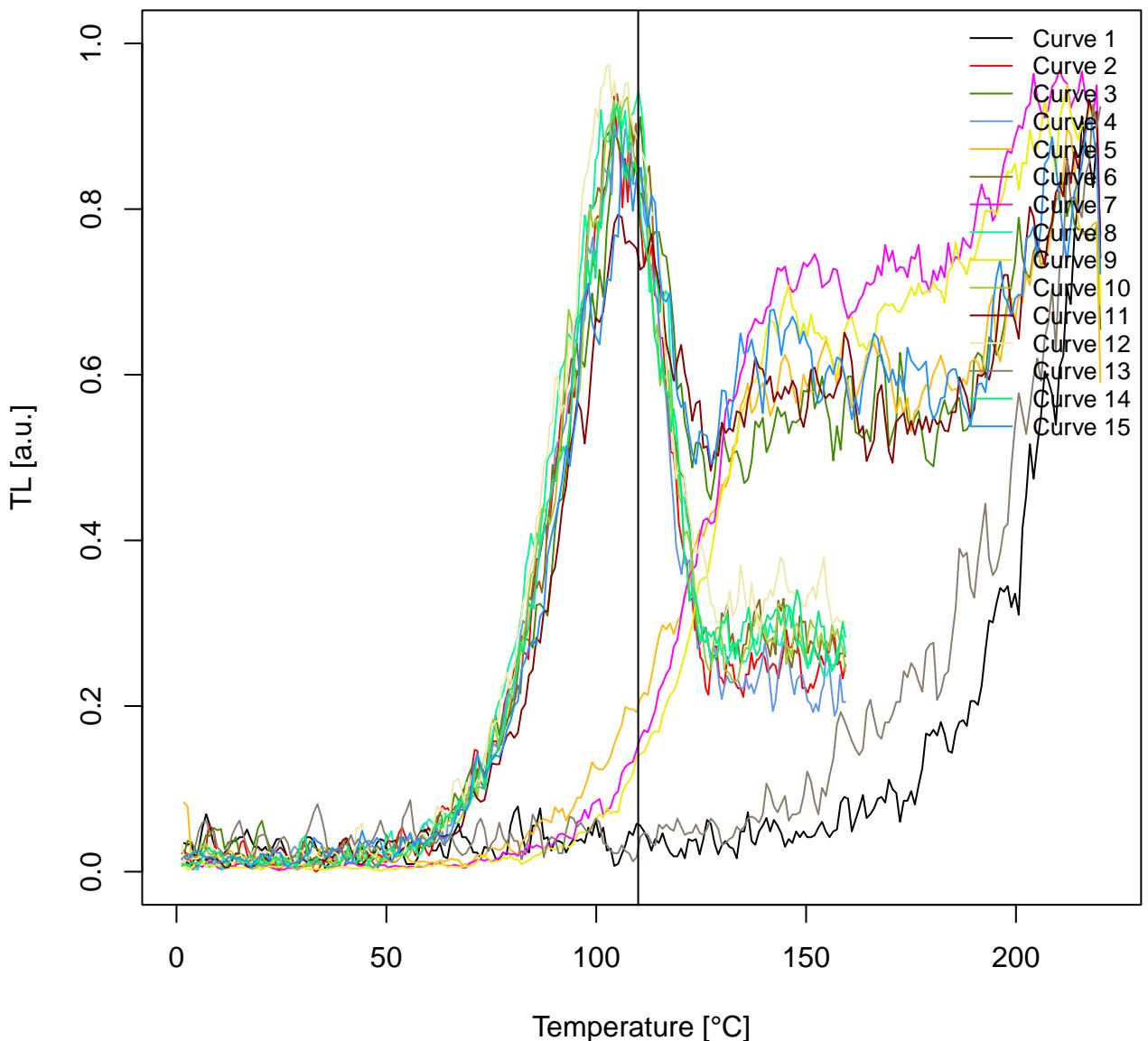
Aliquot #23**Aliquot #24**

TL combined



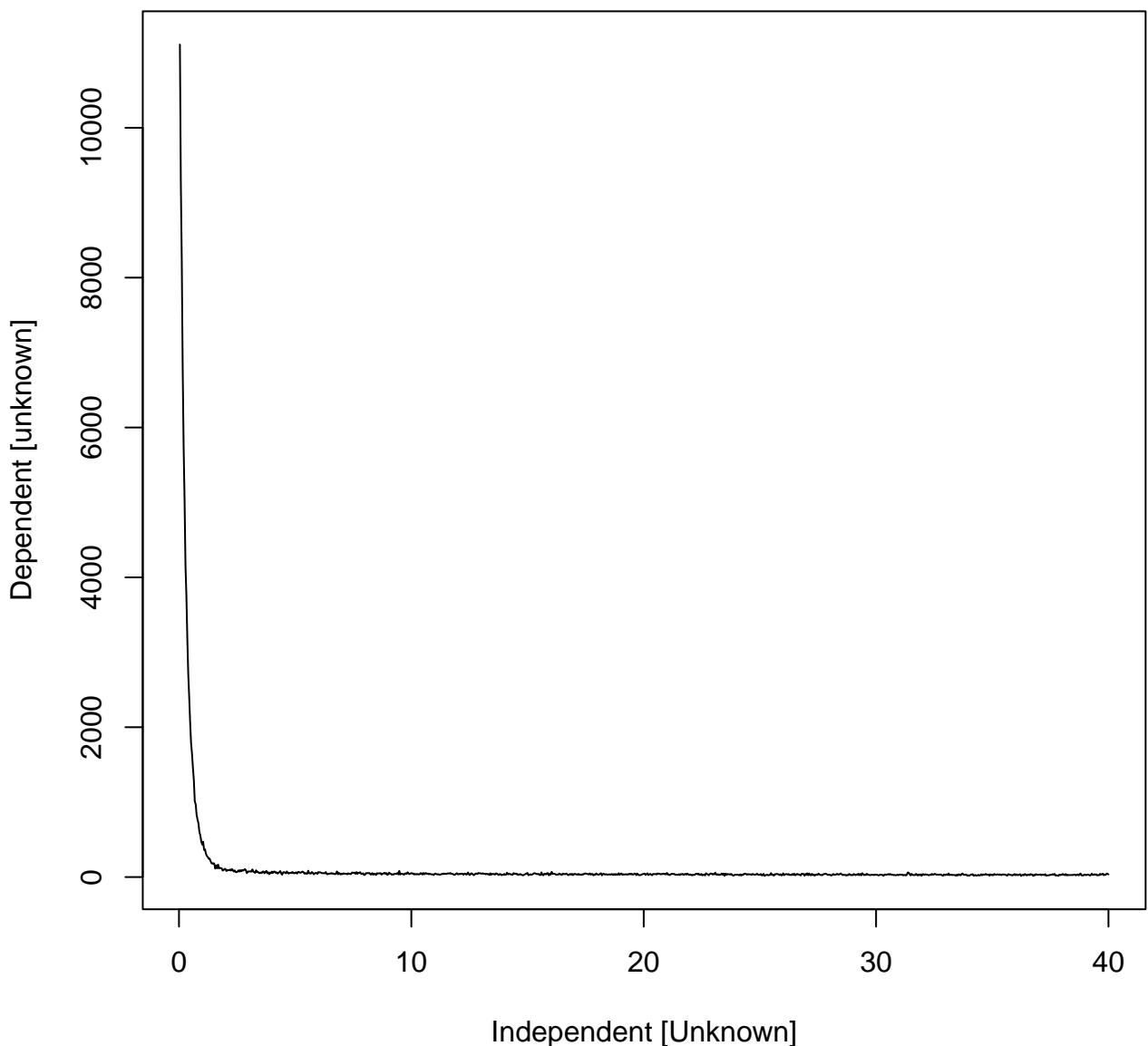
help("plot_RLum.Analysis")

TL combined



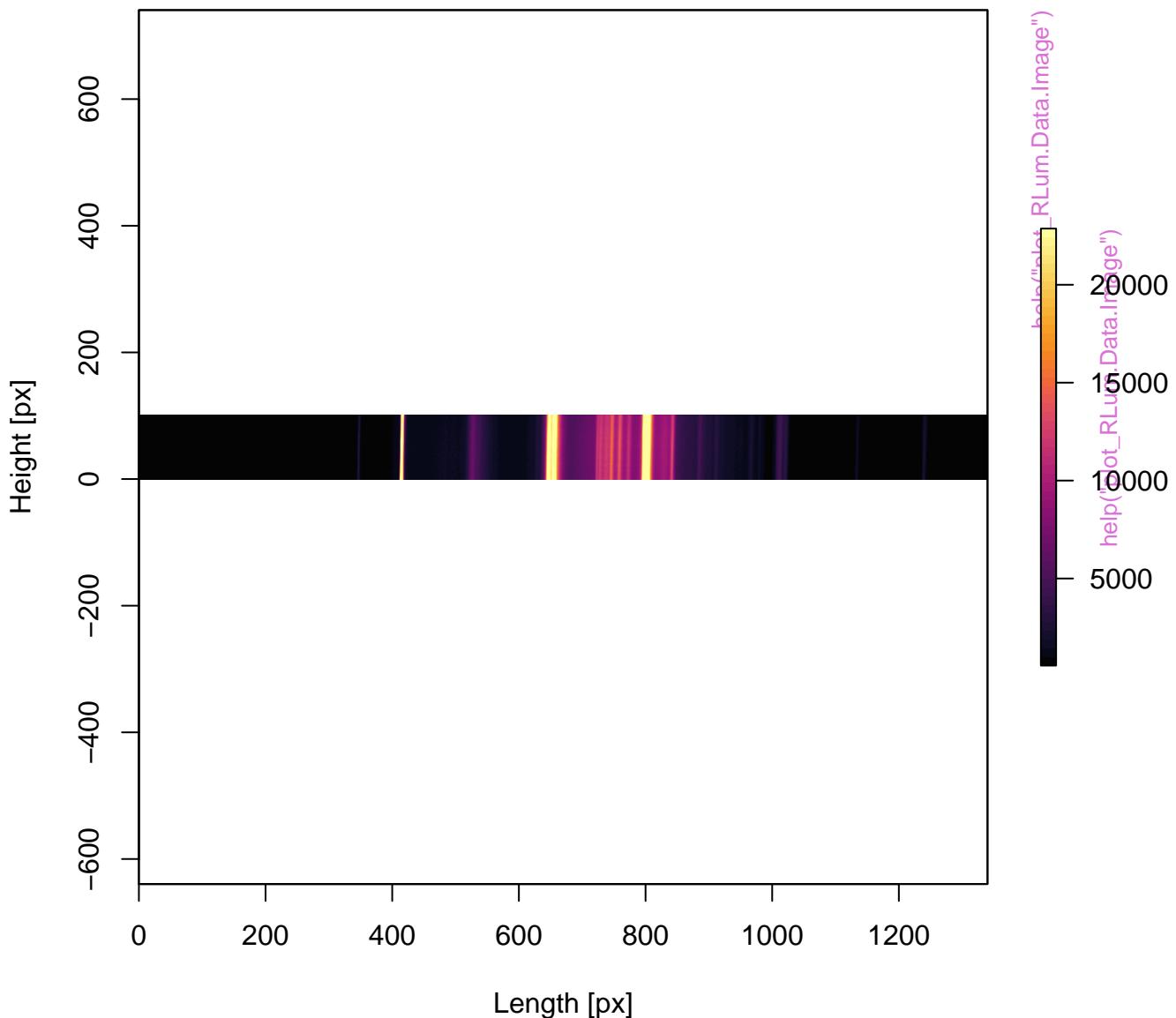
help("plot_RLum.Analysis")

unkown curve type

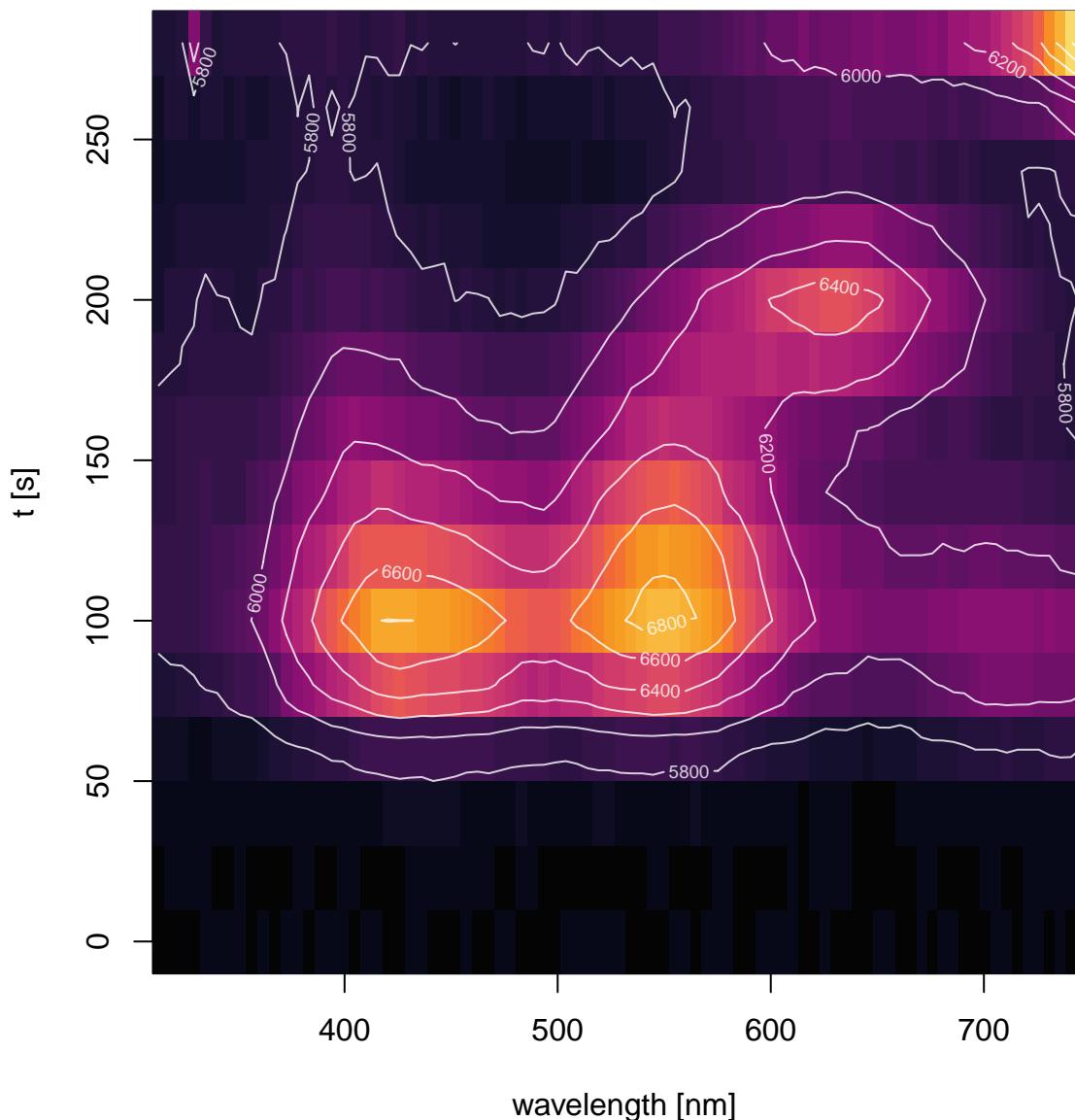


help("plot_RLum.Data.Curve")

RLum.Data.Image # 1

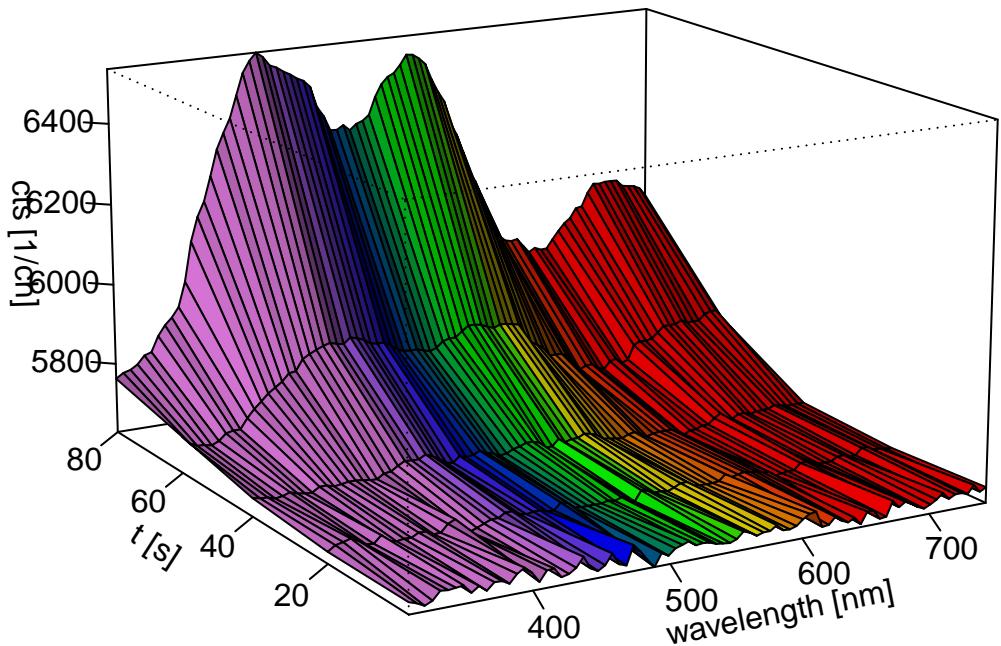


RLum.Data.Spectrum



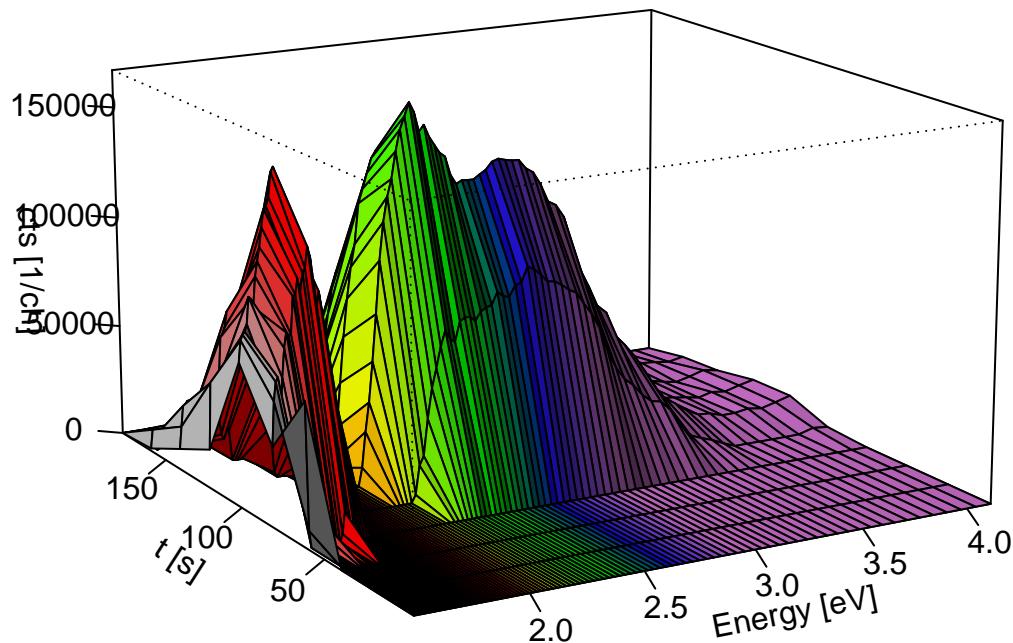
help("plot_RLum.Data.Spectrum")

RLum.Data.Spectrum



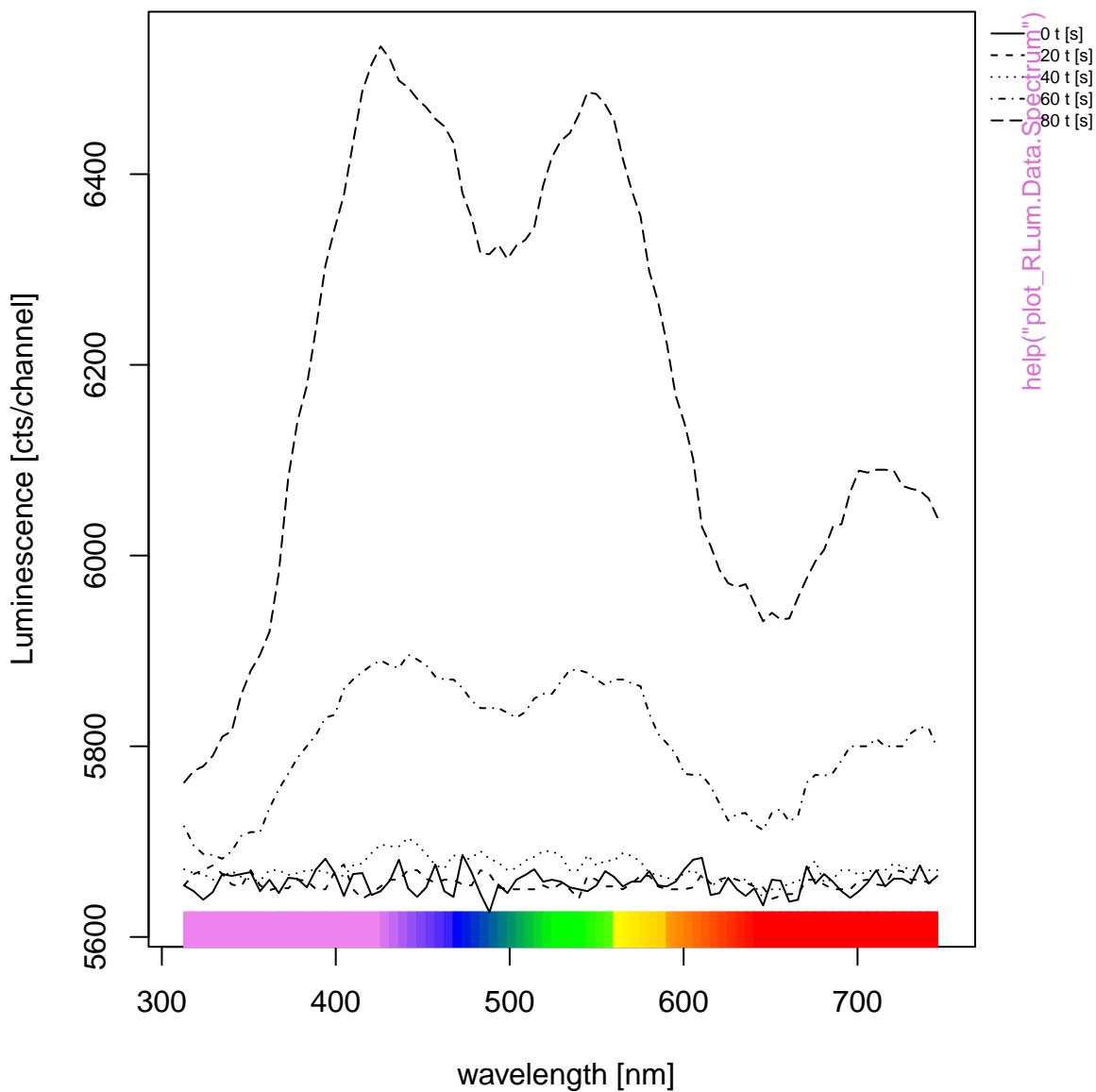
help("plot_RLum.Data.Spectrum")

RLum.Data.Spectrum

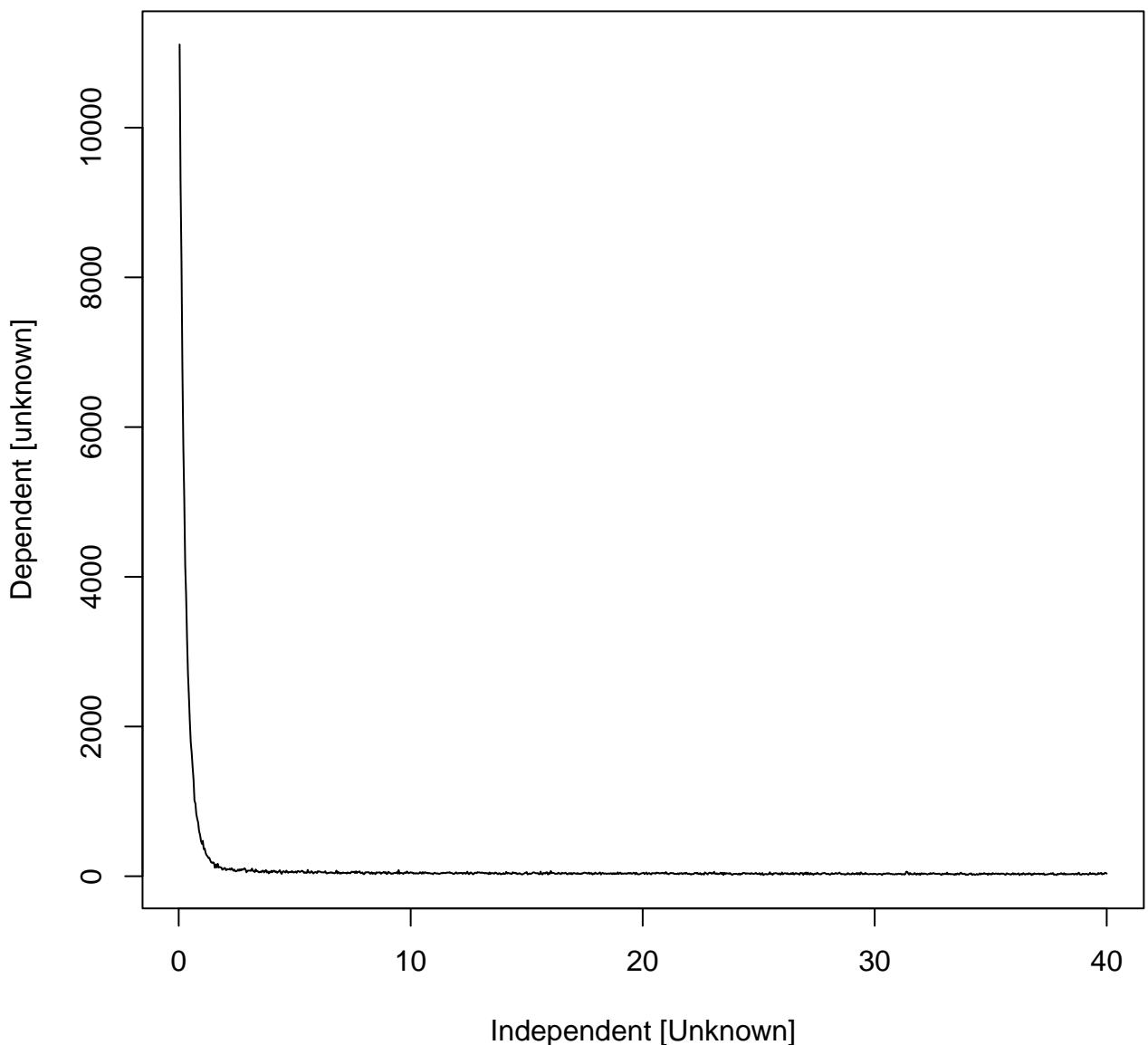


help("plot_RLum.Data.Spectrum")

RLum.Data.Spectrum

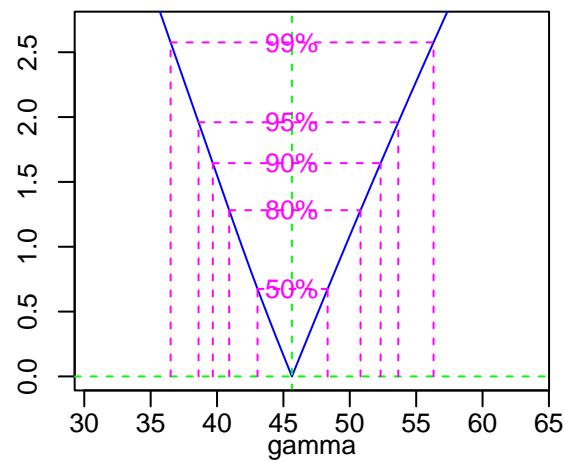


unkown curve type

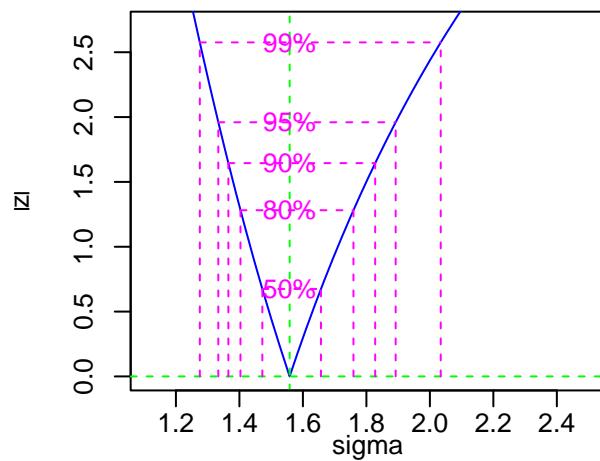


help("plot_RLum")

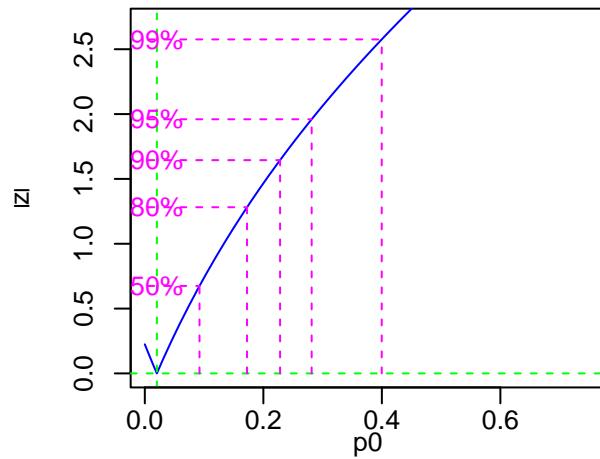
Likelihood profile: gamma



Likelihood profile: sigma



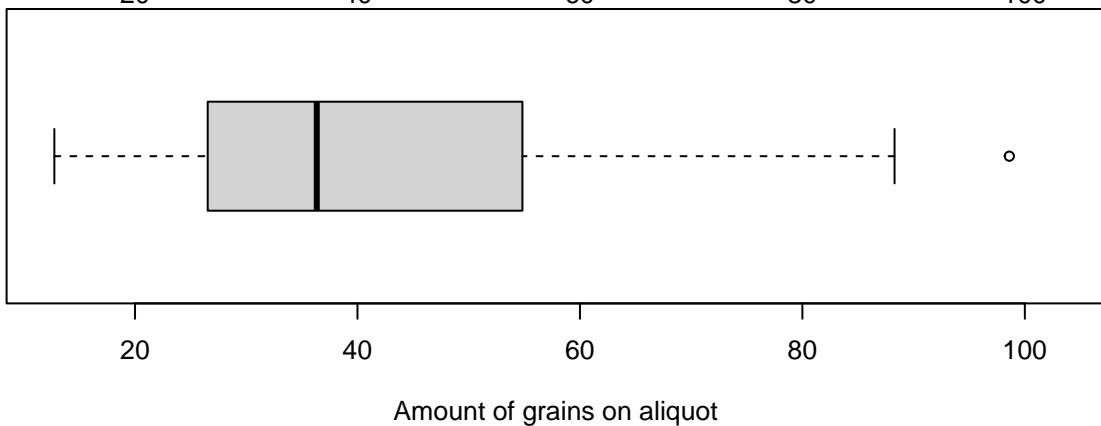
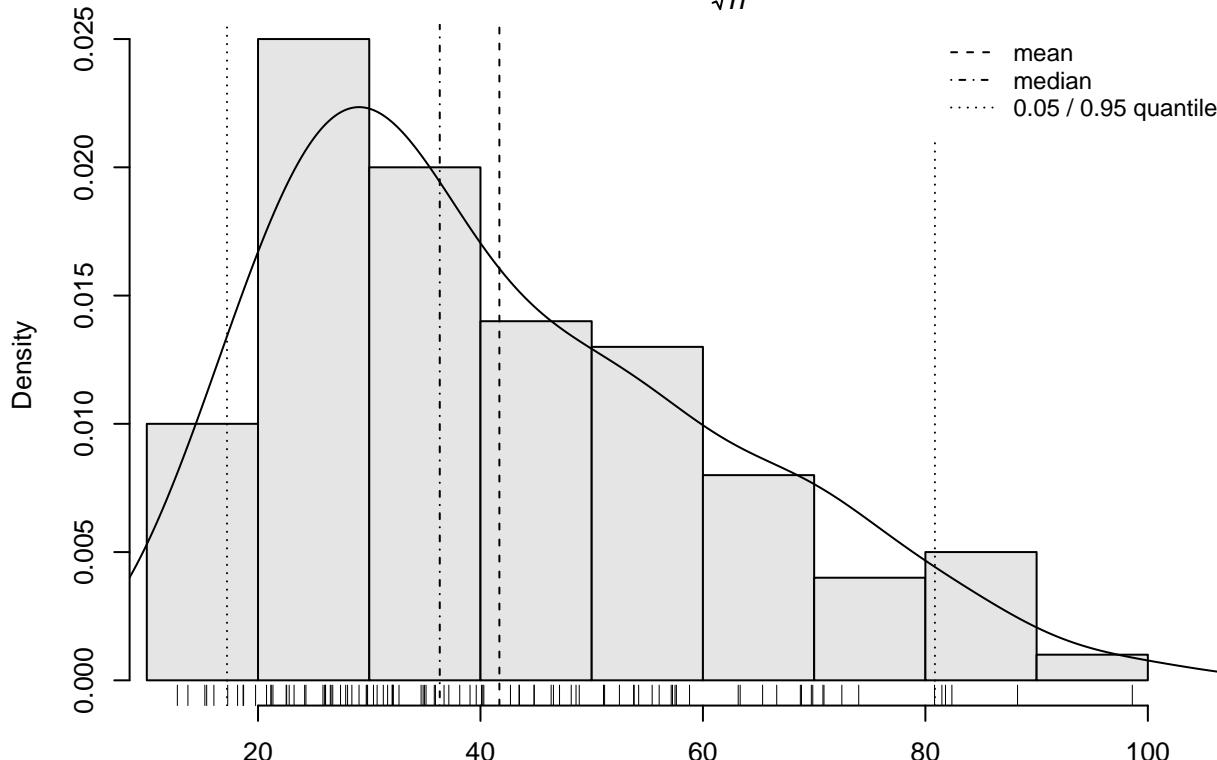
Likelihood profile: p0



```
help("plot_RLum.Results")
```

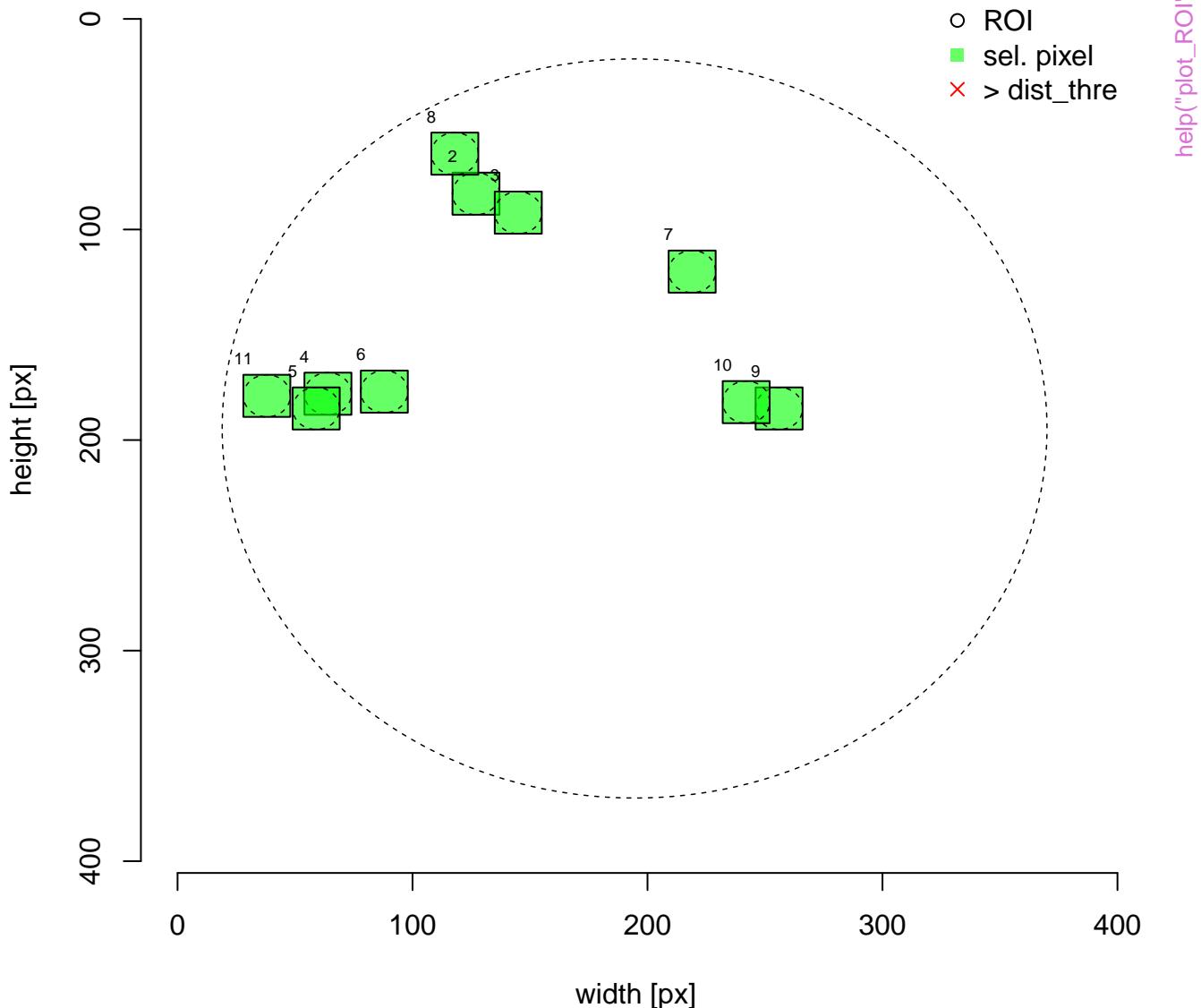
Monte Carlo Simulation

$$n = 100 \quad | \quad \hat{\mu} = 42 \quad | \quad \hat{\sigma} = 20 \quad | \quad \frac{\hat{\sigma}}{\sqrt{n}} = 2 \quad | \quad v = 0.72$$



help("plot_RLum.Results")

Spatial ROI Distribution

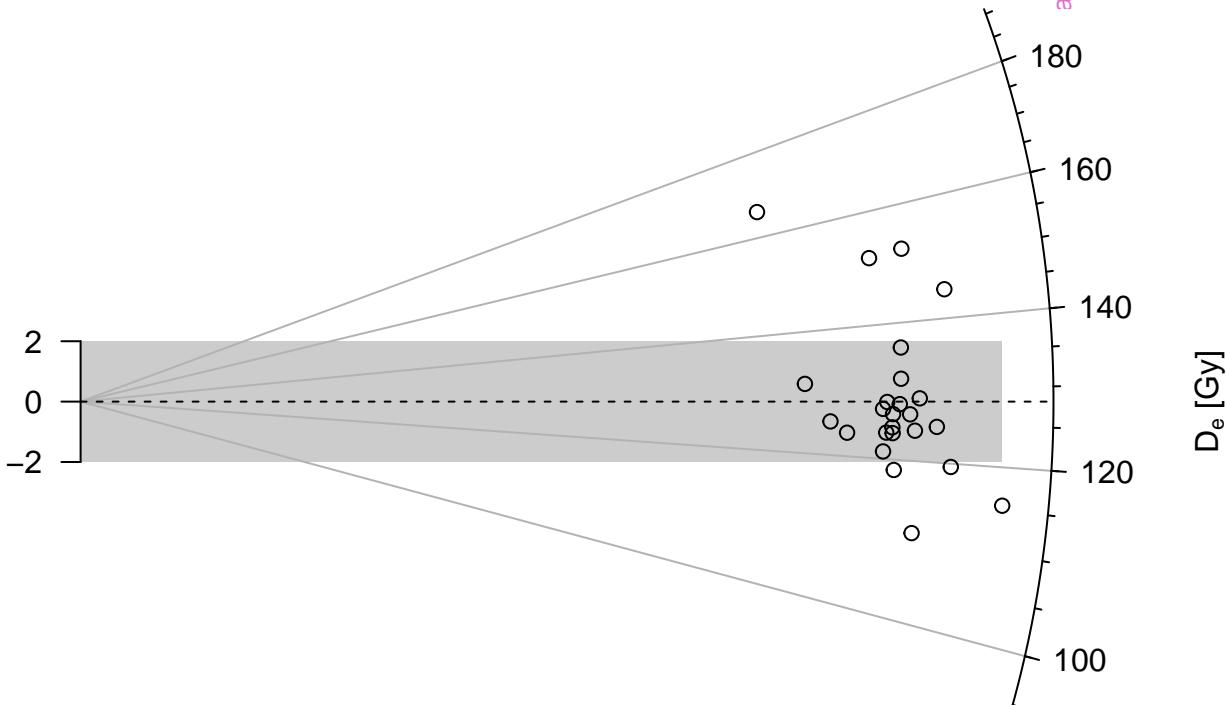


D_e distribution

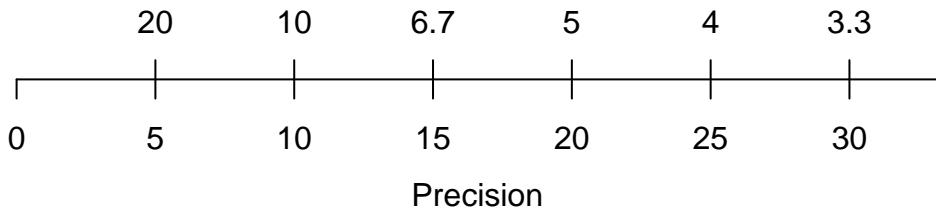
$n = 25 \mid \text{in } 2 \text{ sigma} = 68\%$

adjPlot")

Standardised estimate

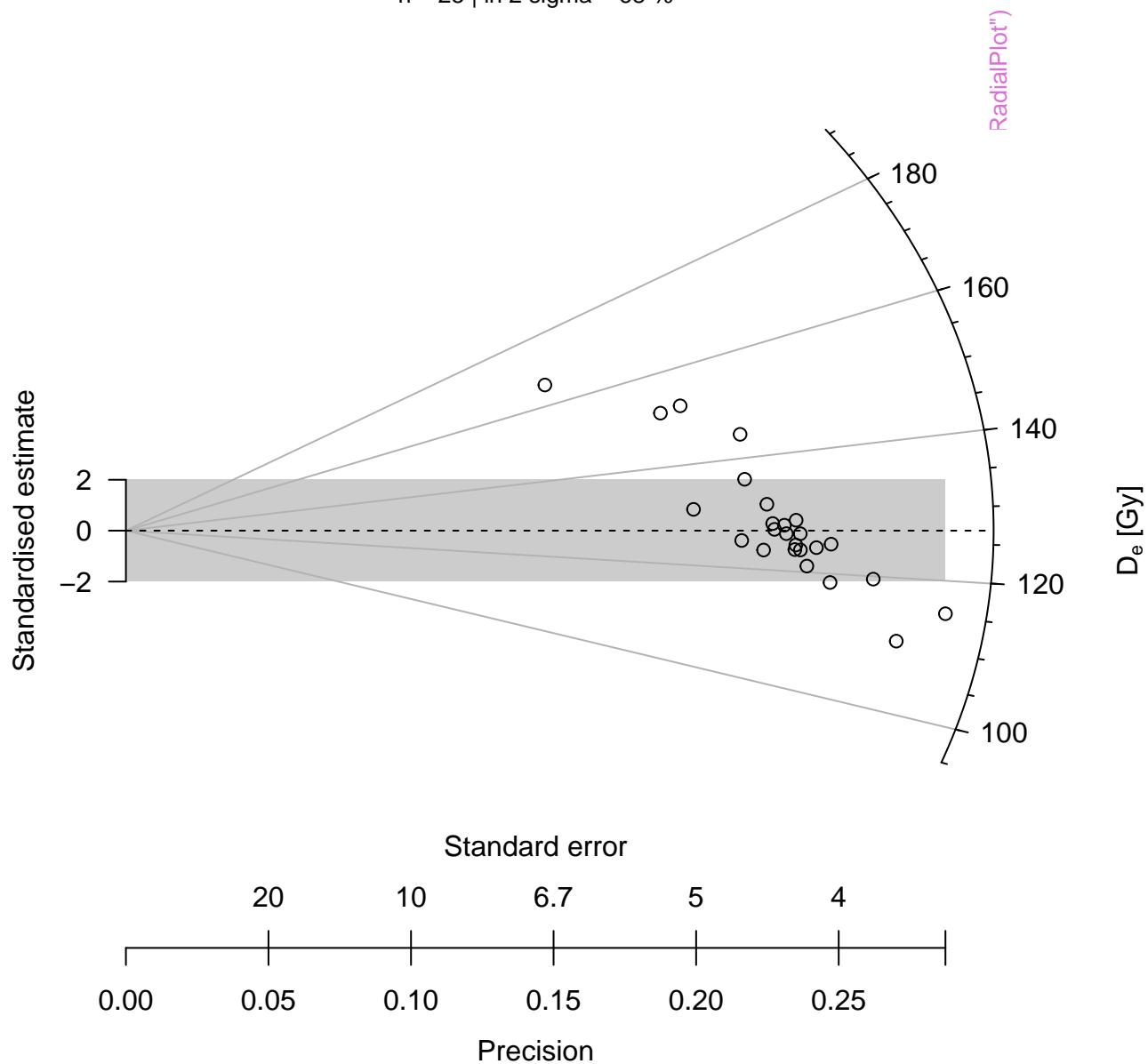


Relative standard error (%)



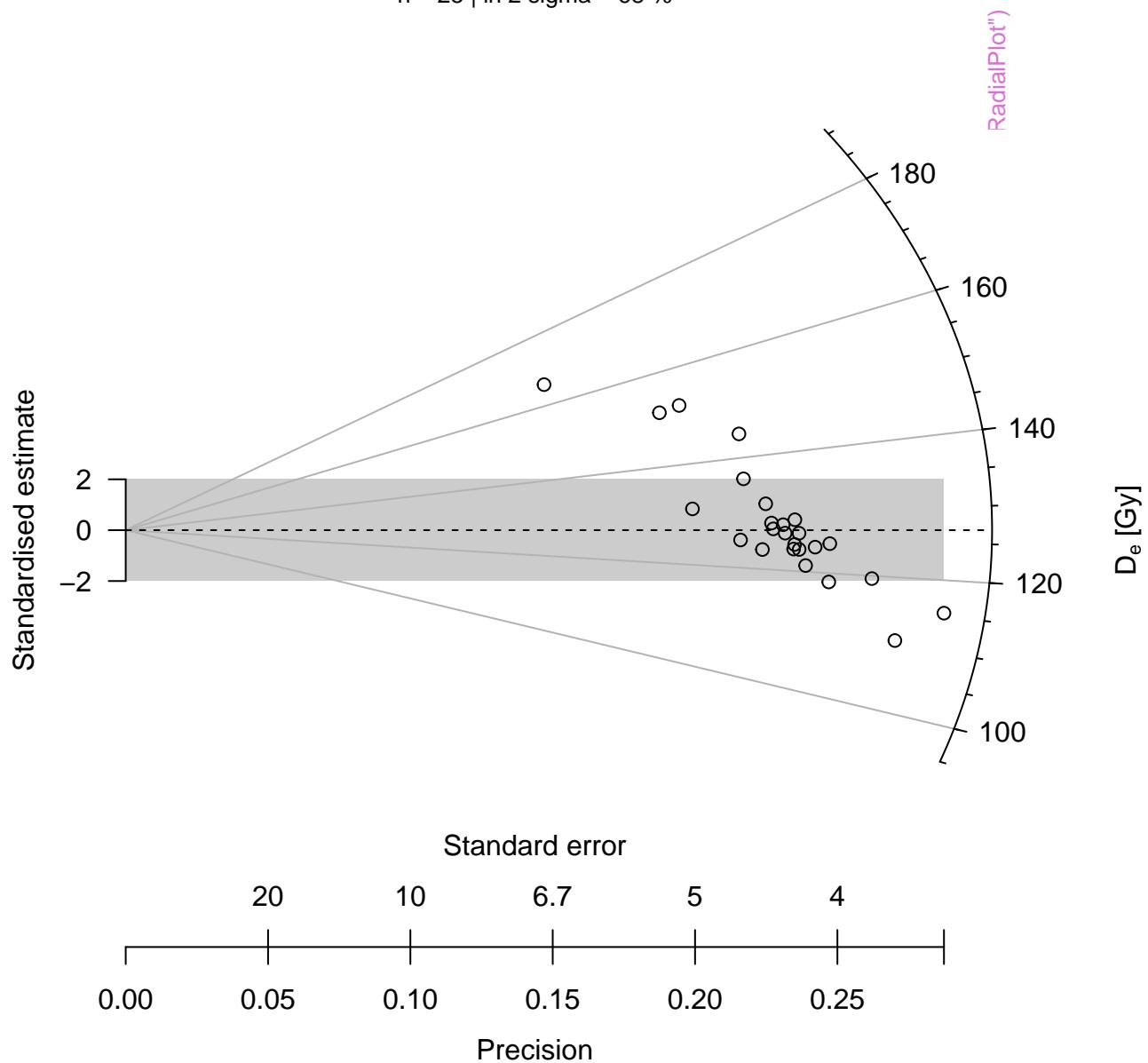
D_e distribution

$n = 25$ | in 2 sigma = 68 %



D_e distribution

$n = 25$ | in 2 sigma = 68 %



D_e distribution

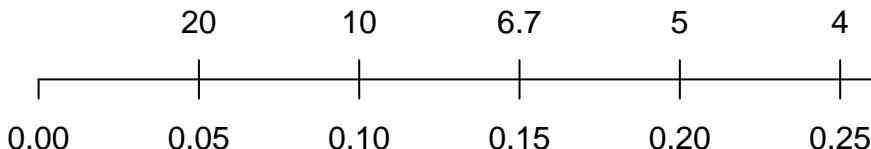
$n = 25$ | in 2 sigma = 68 %

_RadialPlot")

Standardised estimate

-2
0
2

Standard error



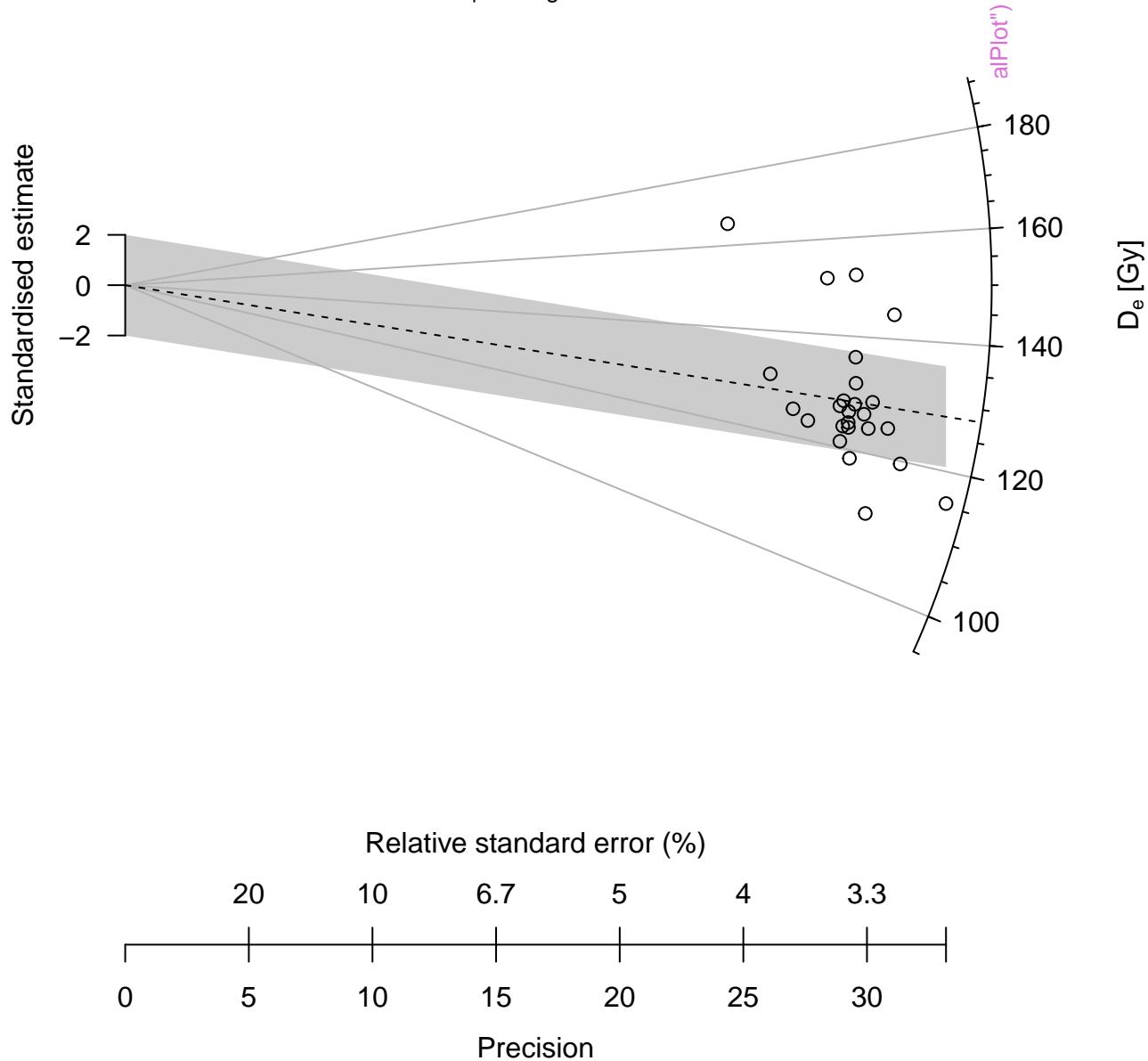
Precision

D_e [Gy]

100
120
140
160
180
200

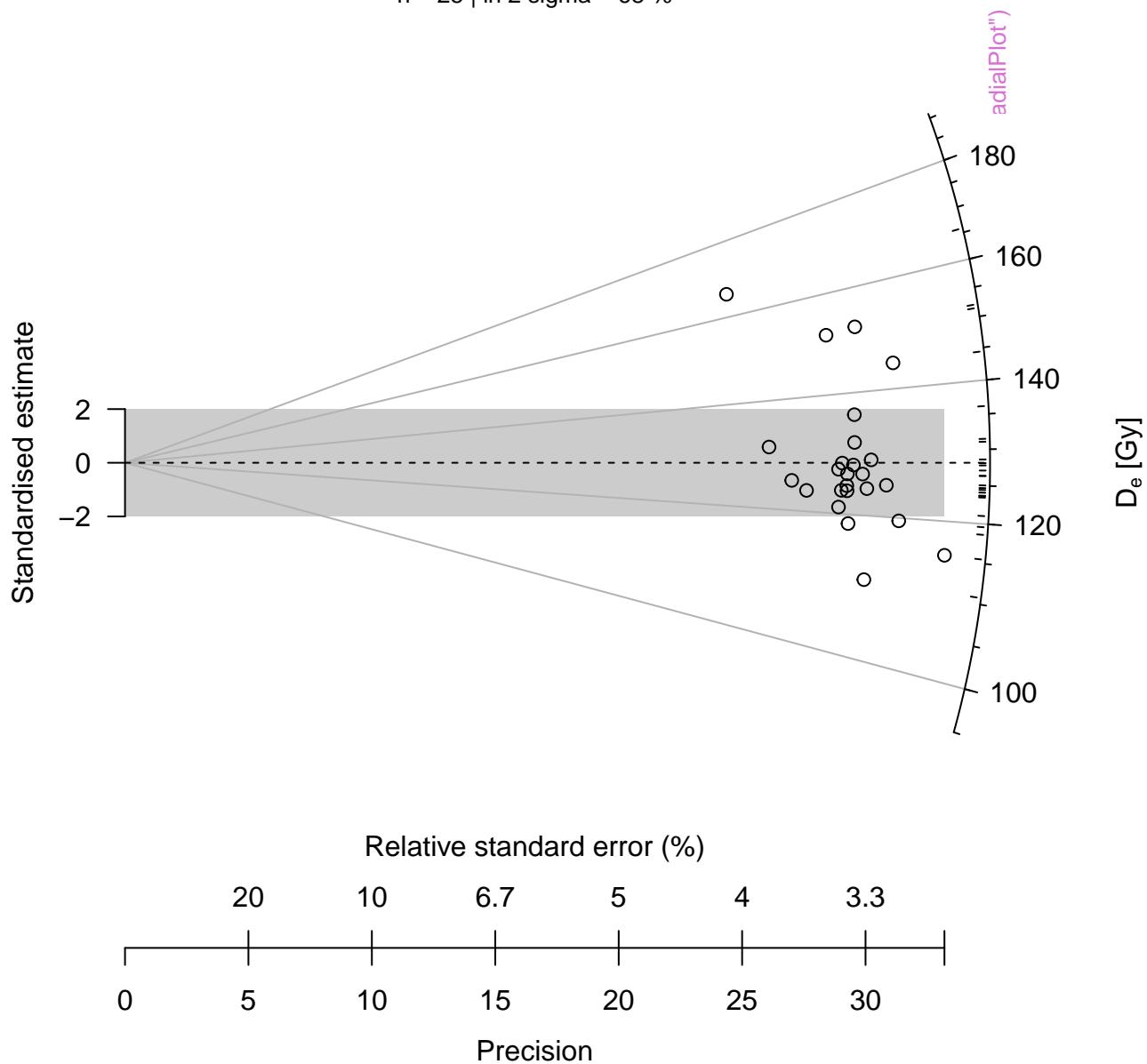
D_e distribution

$n = 25$ | in 2 sigma = 68 %



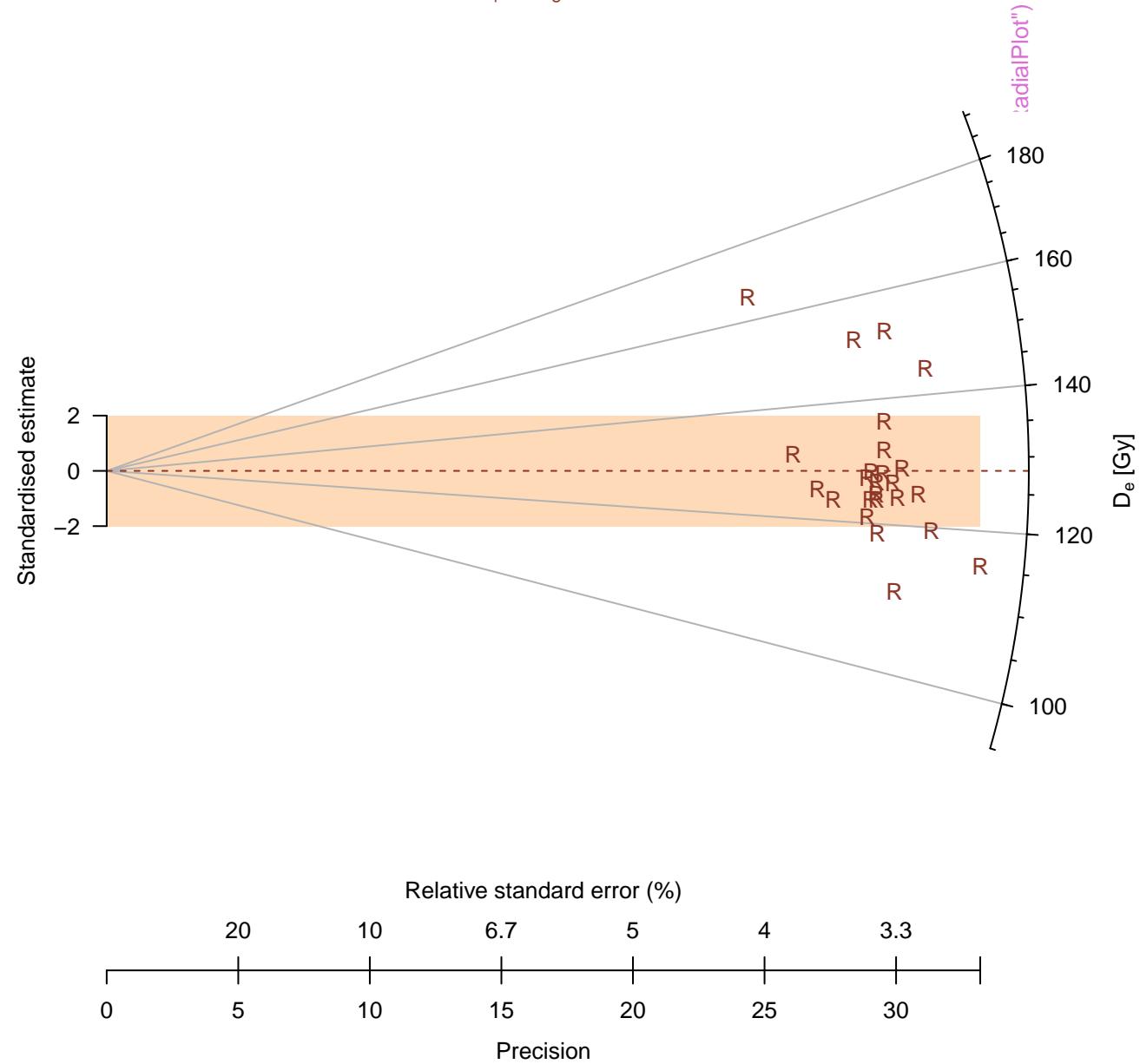
D_e distribution

$n = 25$ | in 2 sigma = 68 %



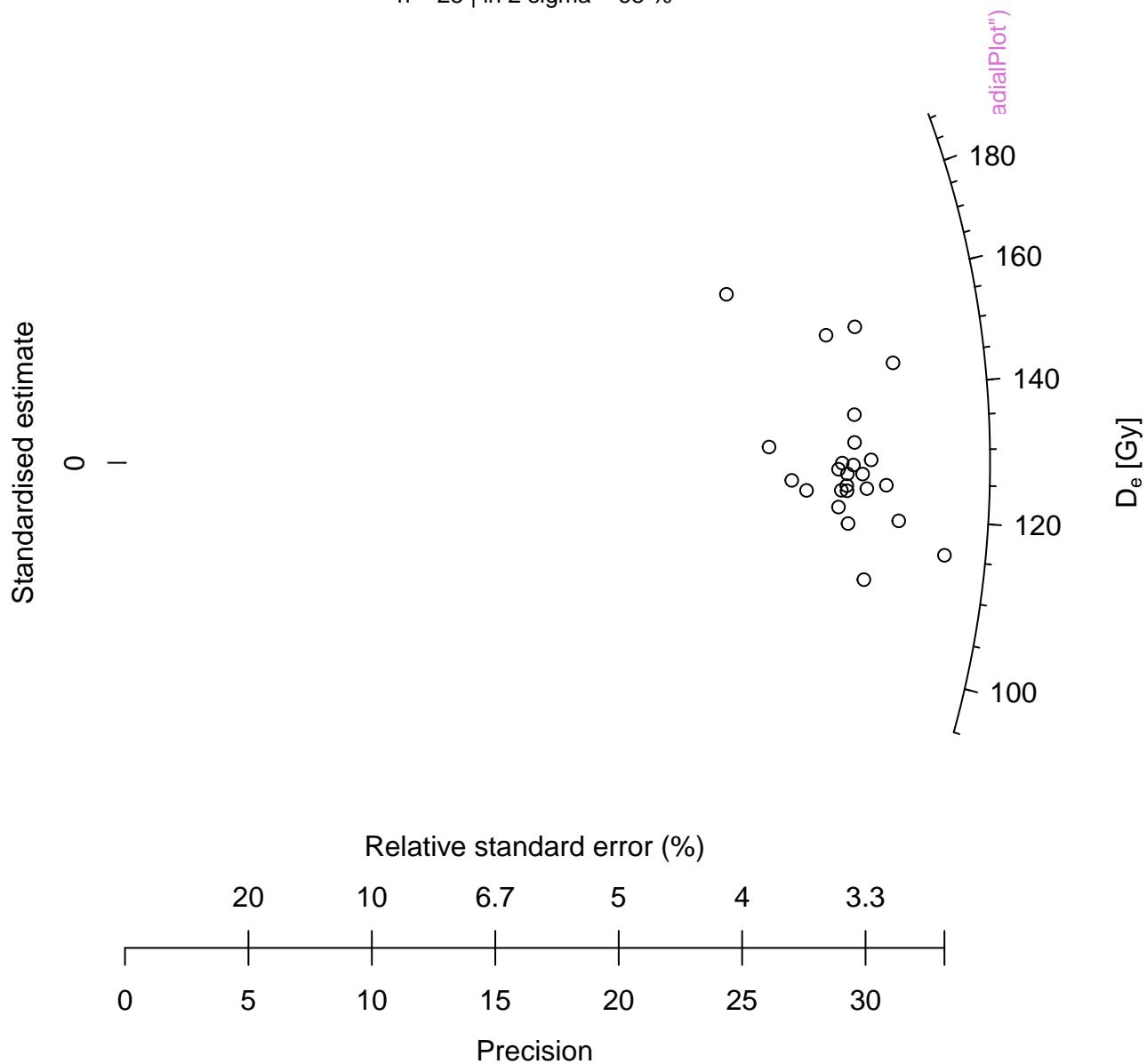
D_e distribution

$n = 25$ | in 2 sigma = 68 %



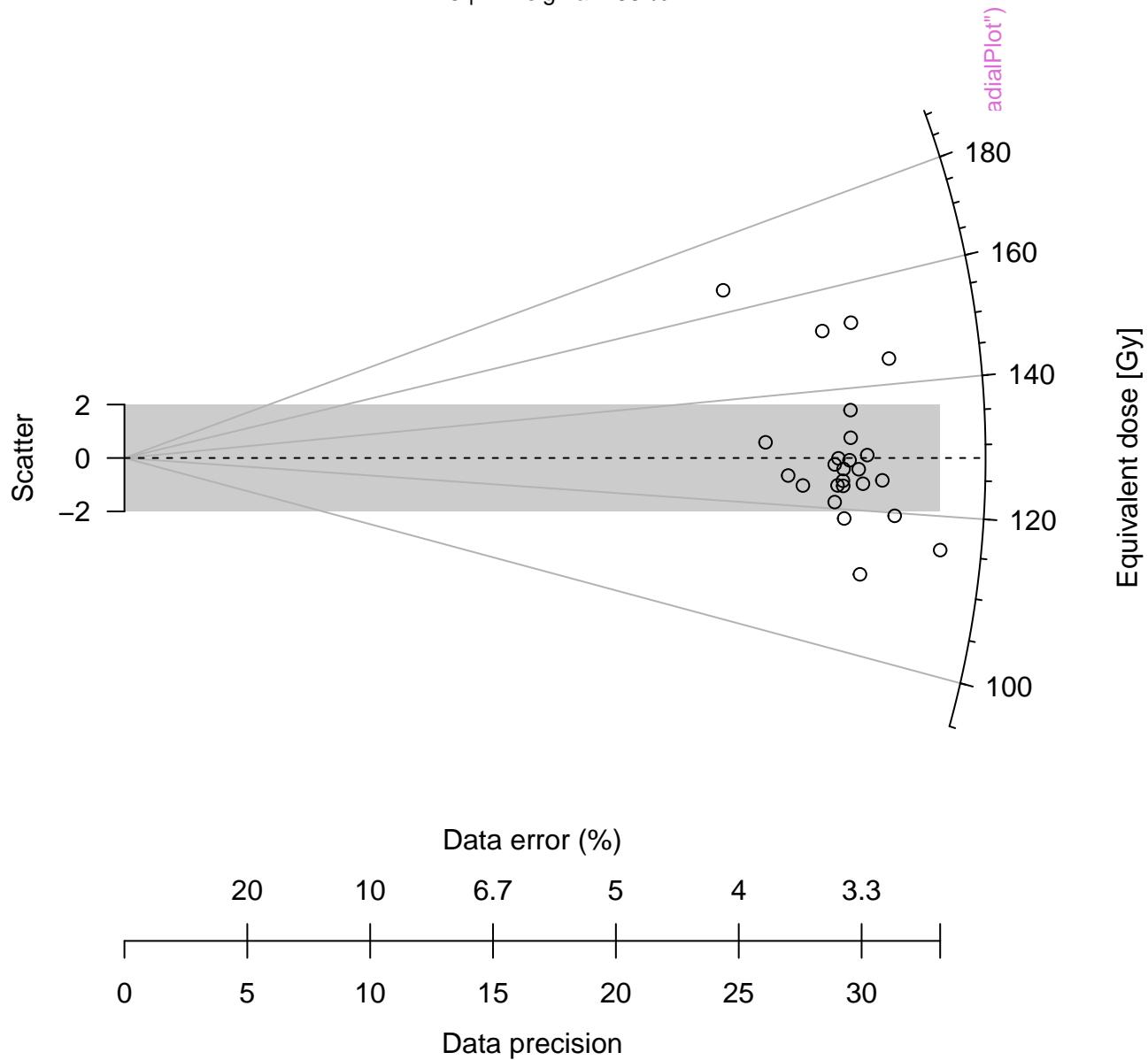
D_e distribution

$n = 25$ | in 2 sigma = 68 %



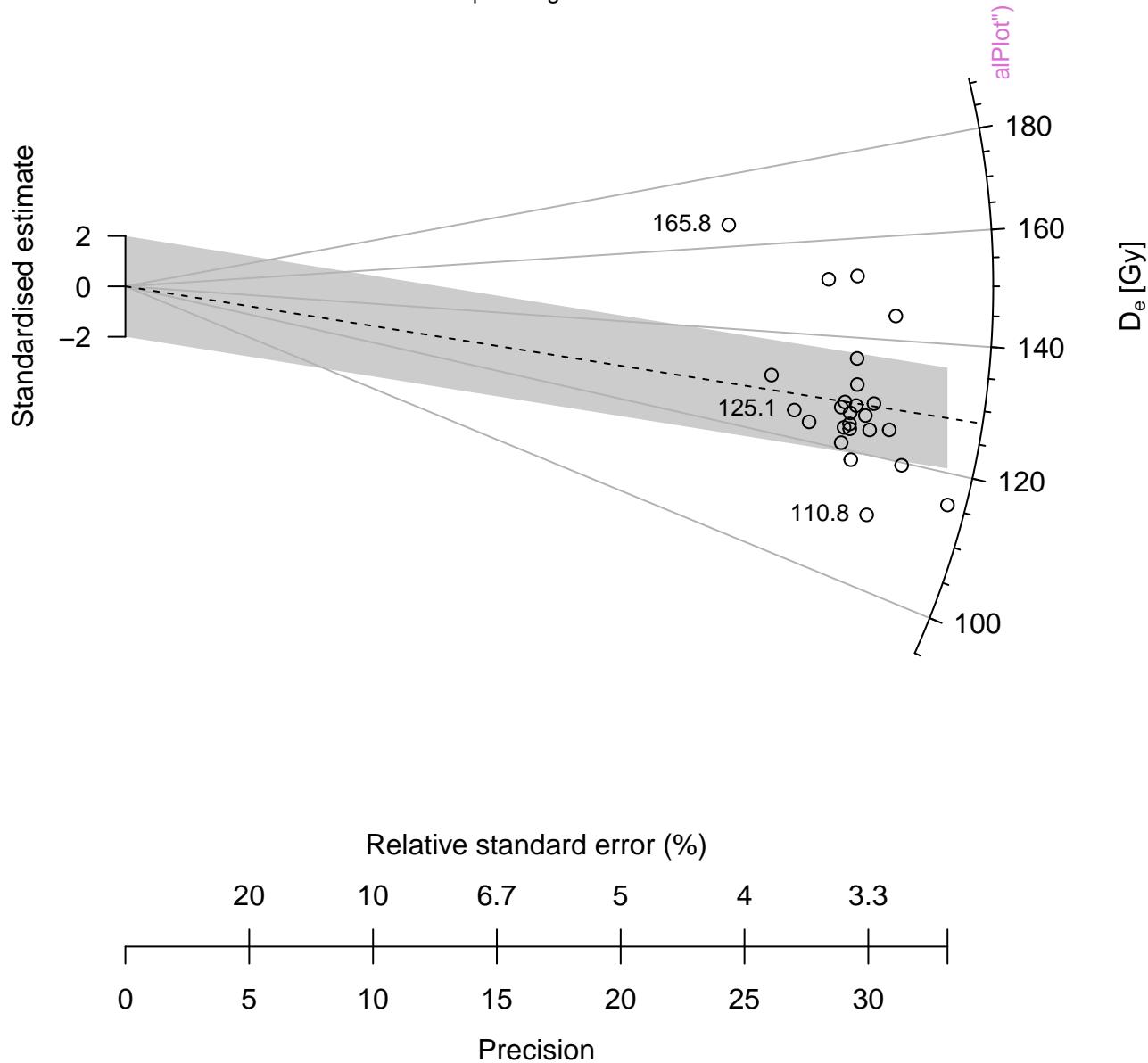
D_e distribution

$n = 25$ | in 2 sigma = 68 %



D_e distribution

$n = 25$ | in 2 sigma = 68 %

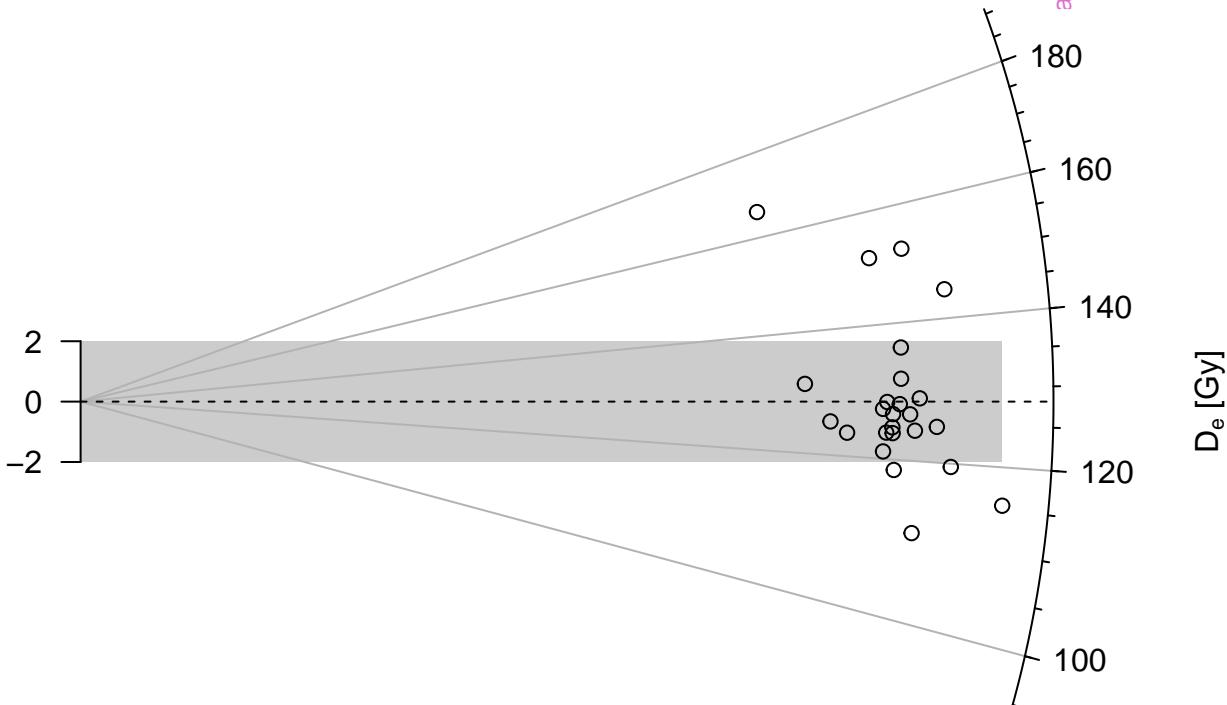


D_e distribution

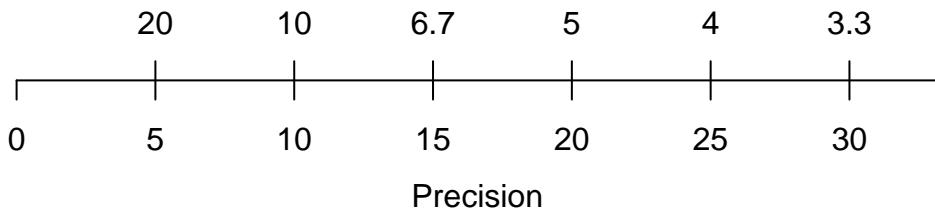
$n = 25 \mid \text{in } 2 \text{ sigma} = 68\%$

adjPlot")

Standardised estimate

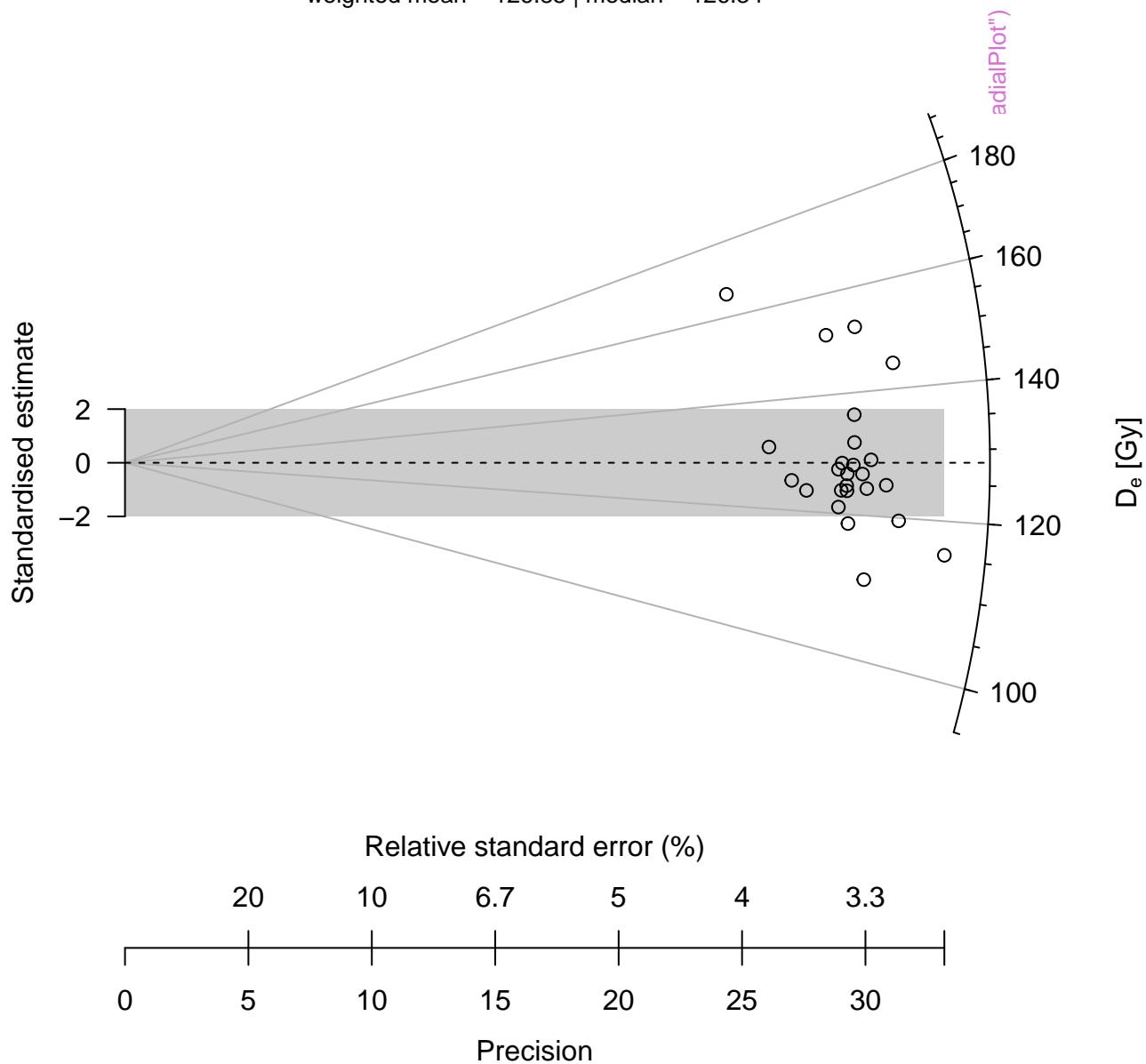


Relative standard error (%)



D_e distribution

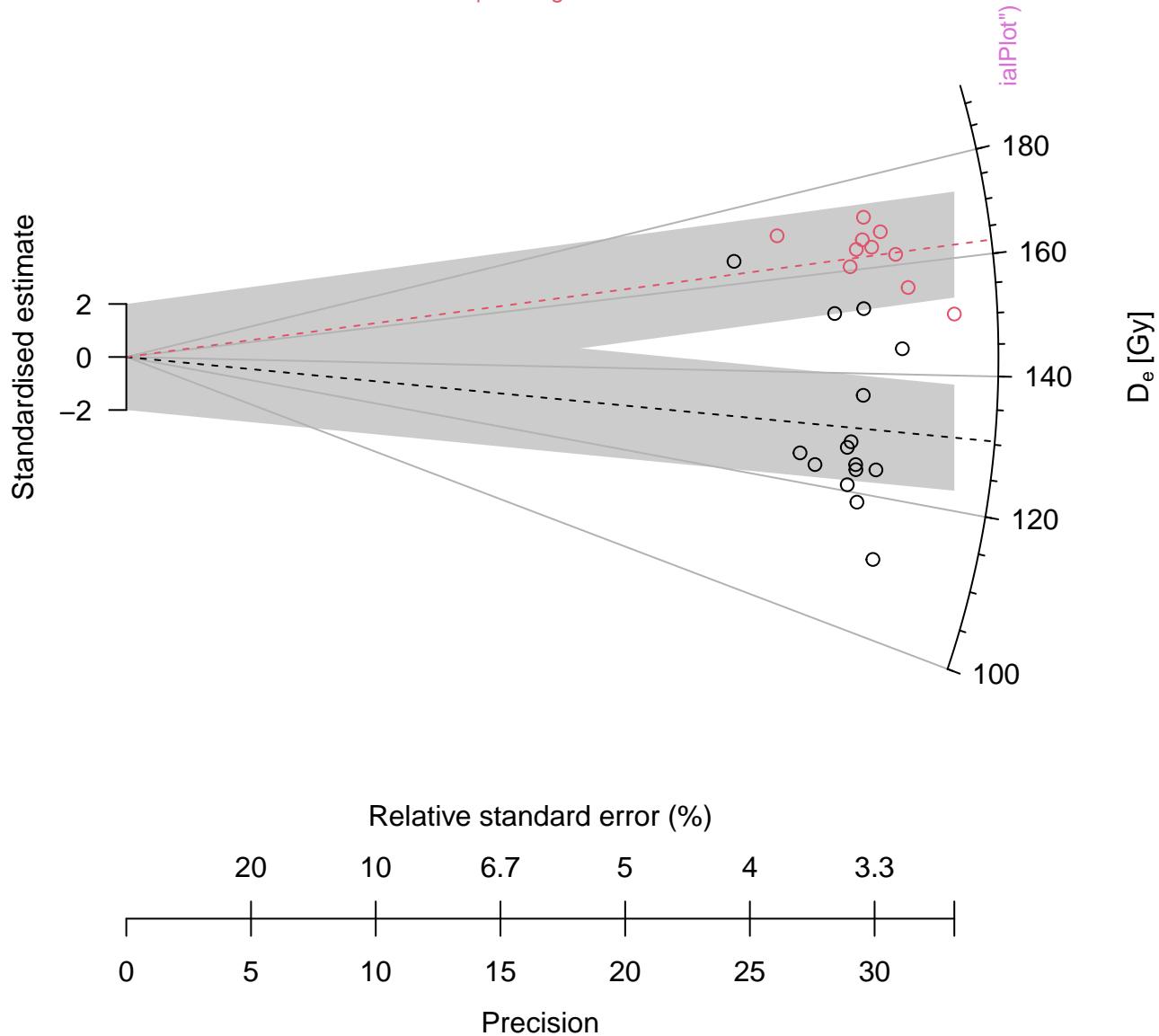
weighted mean = 126.85 | median = 126.34



D_e distribution

$n = 15$ | in 2 sigma = 53.3 %

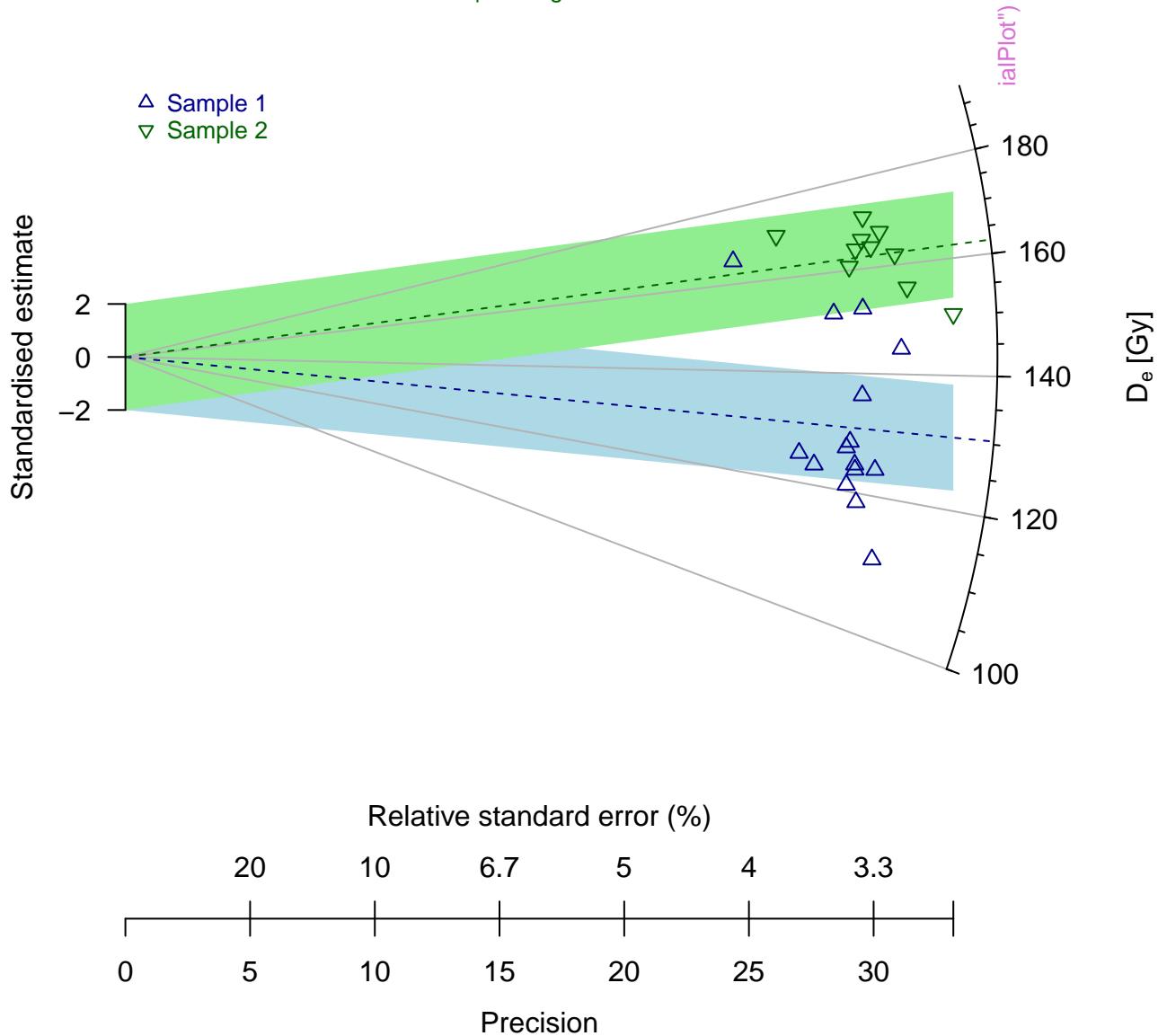
$n = 10$ | in 2 sigma = 90 %



D_e distribution

$n = 15 \mid \text{in 2 sigma} = 53.3\%$

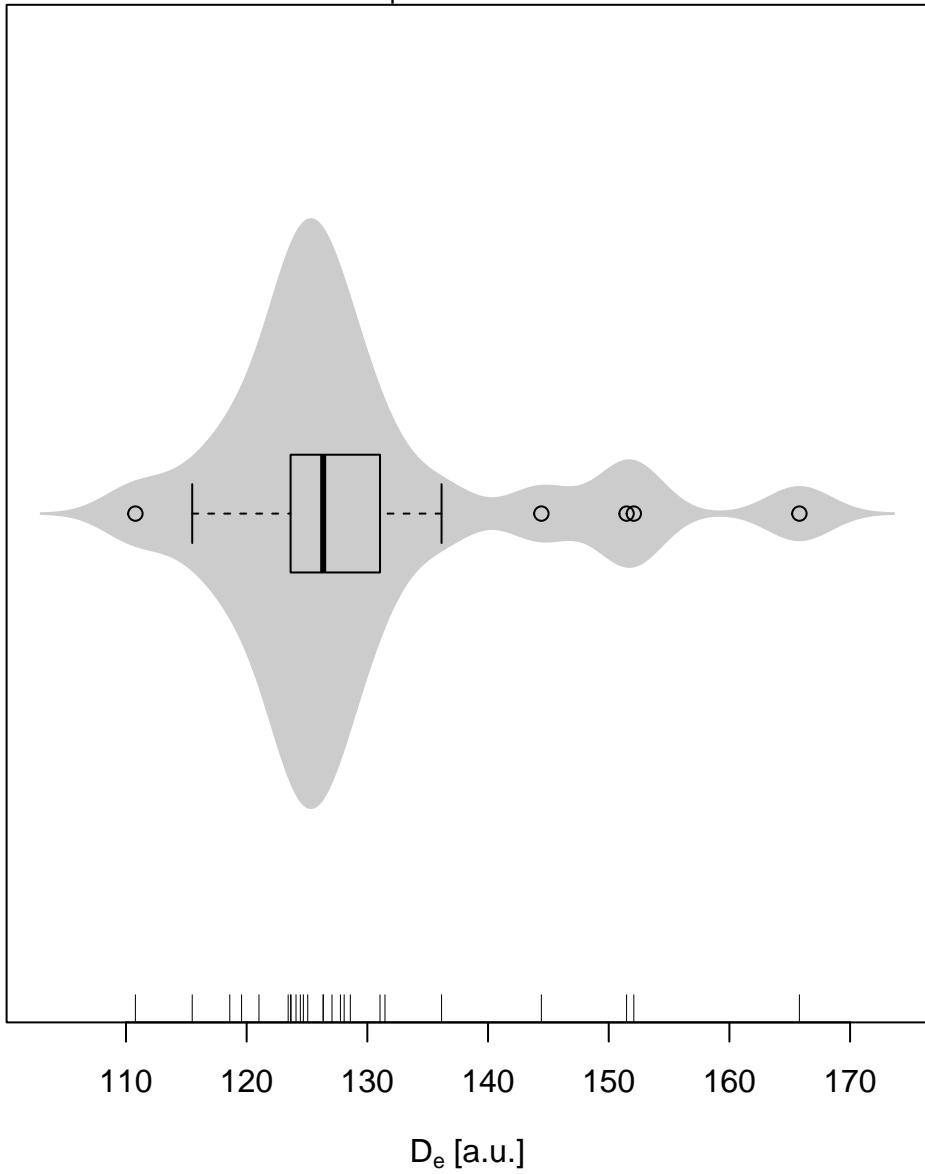
$n = 10 \mid \text{in 2 sigma} = 90\%$



Violin Plot

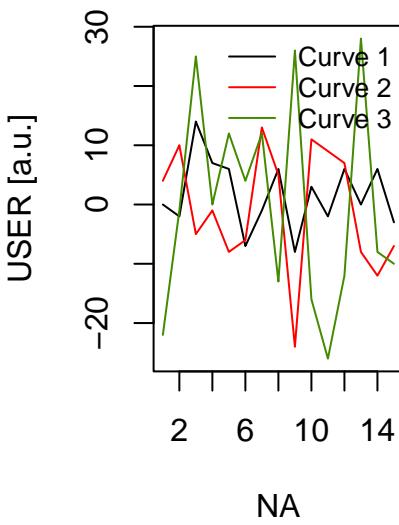
n = 25 | median = 126.34

Density

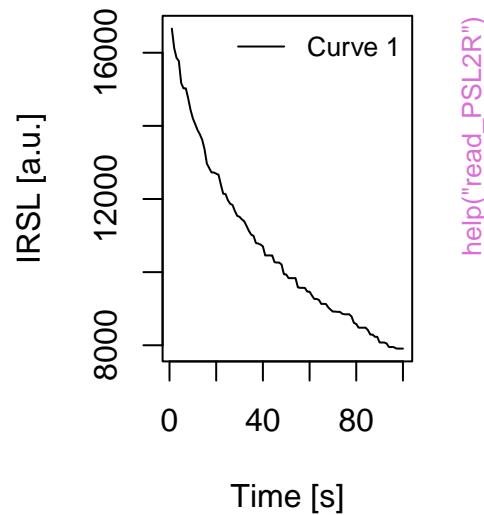


help("plot_ViolinPlot")

USER combined

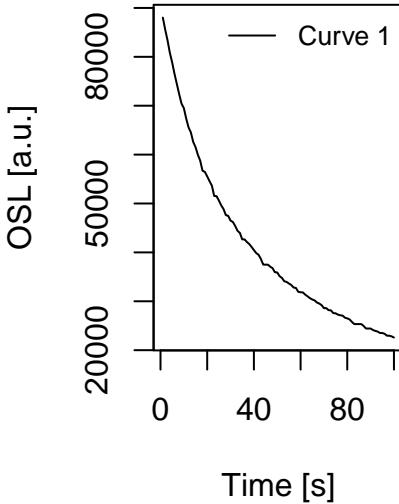


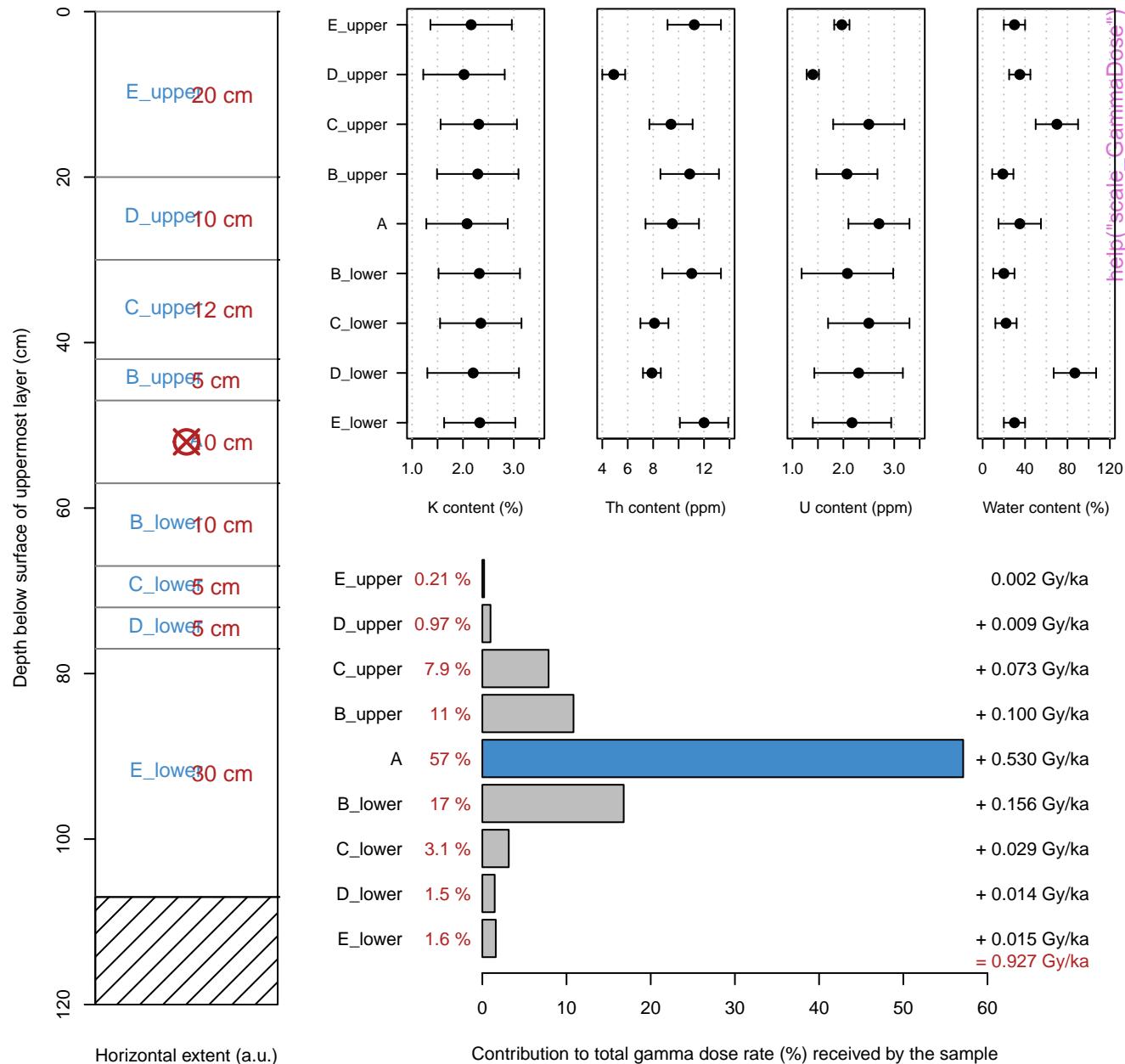
IRSL combined



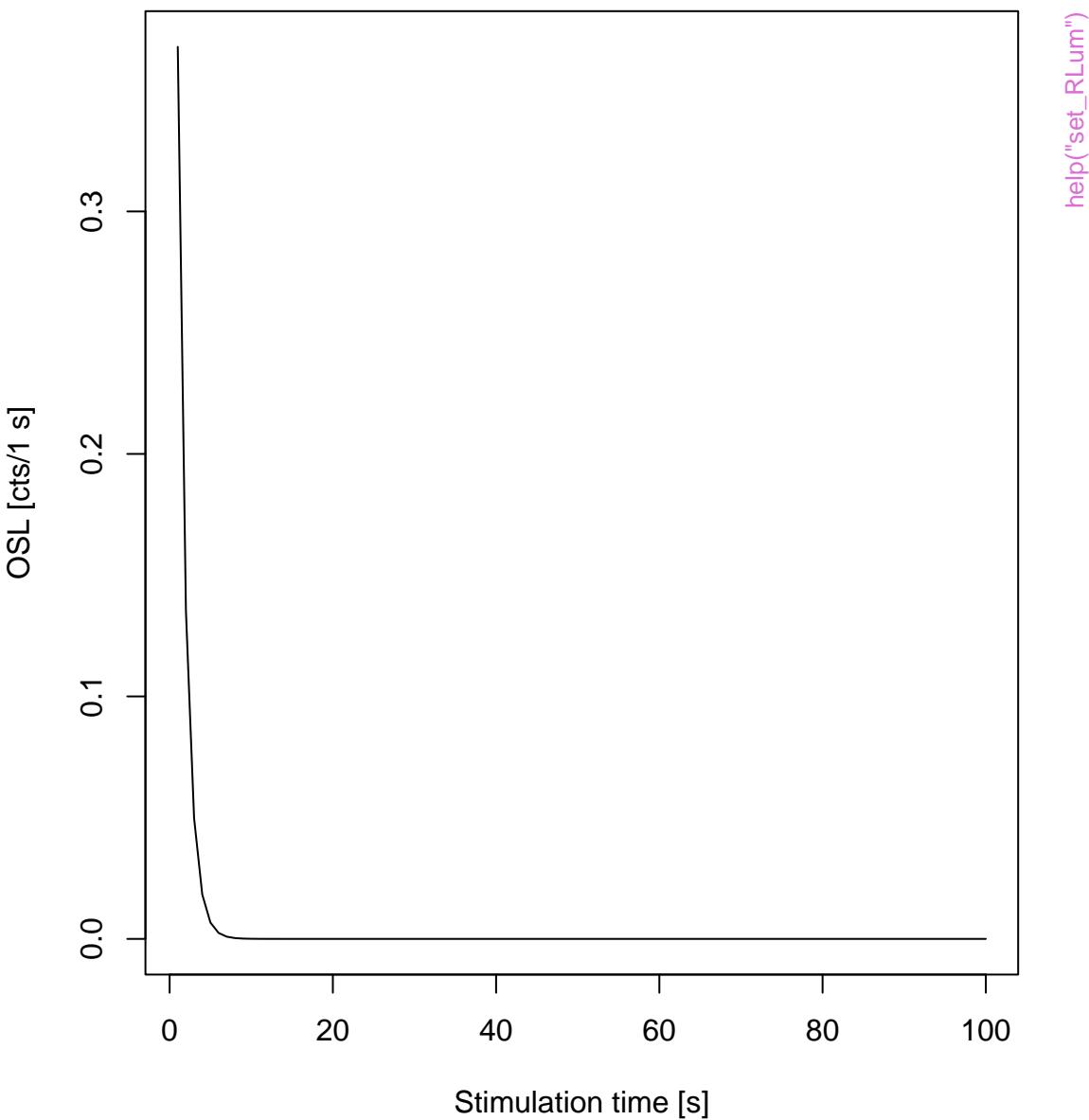
help("read_PSL2R")

OSL combined



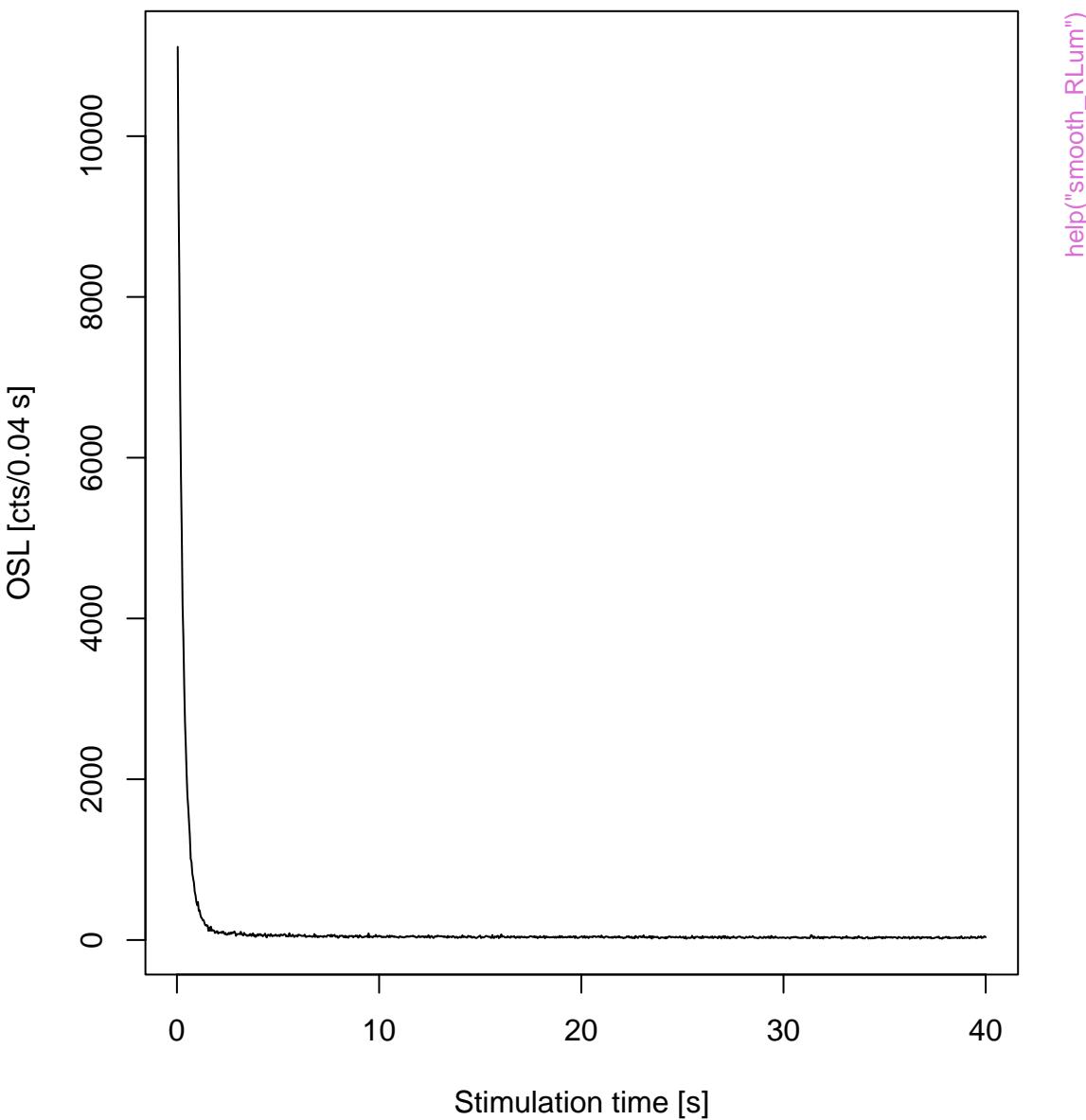


OSL



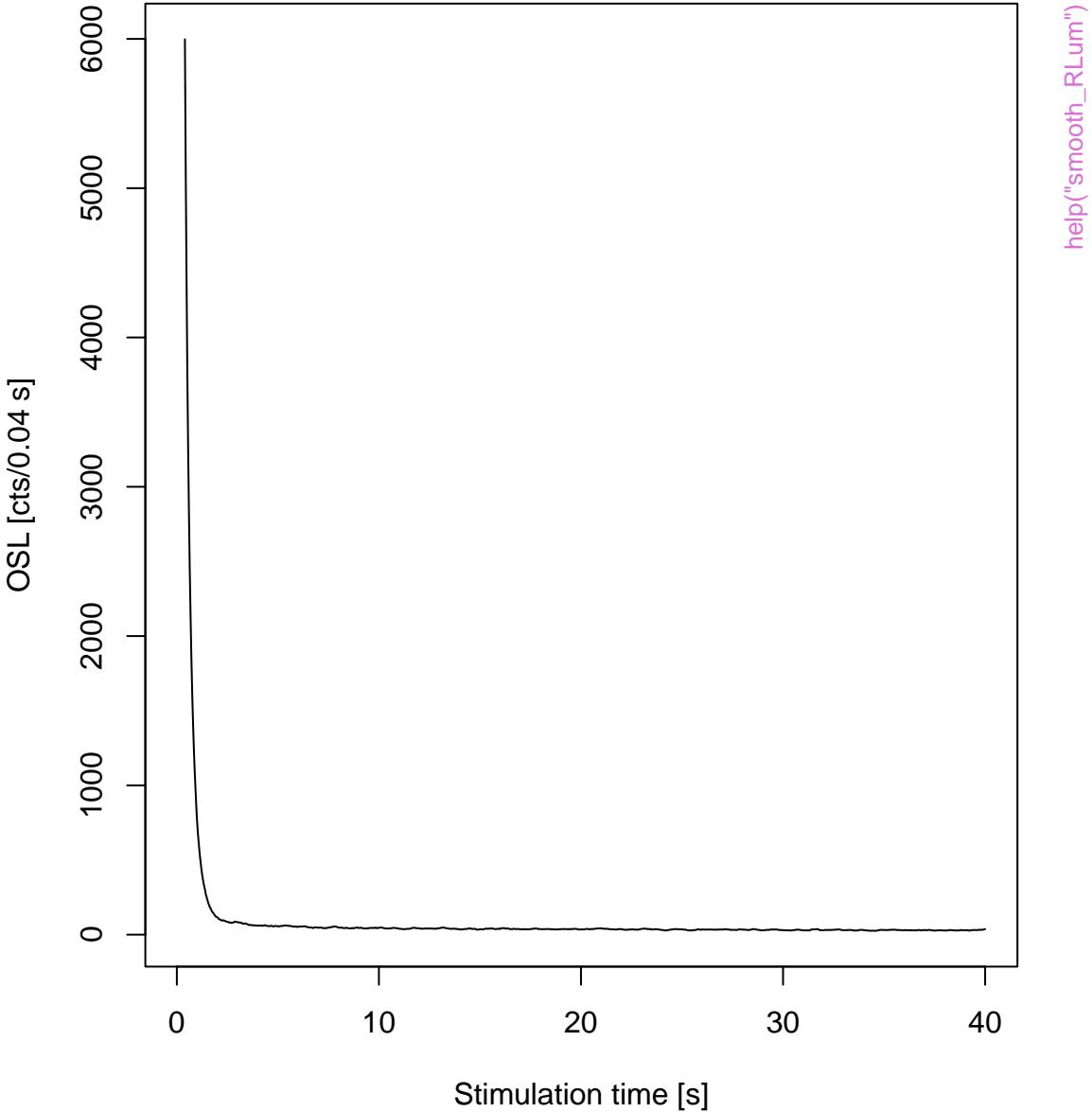
help("set_RLum")

OSL



help("smooth_RLum")

OSL

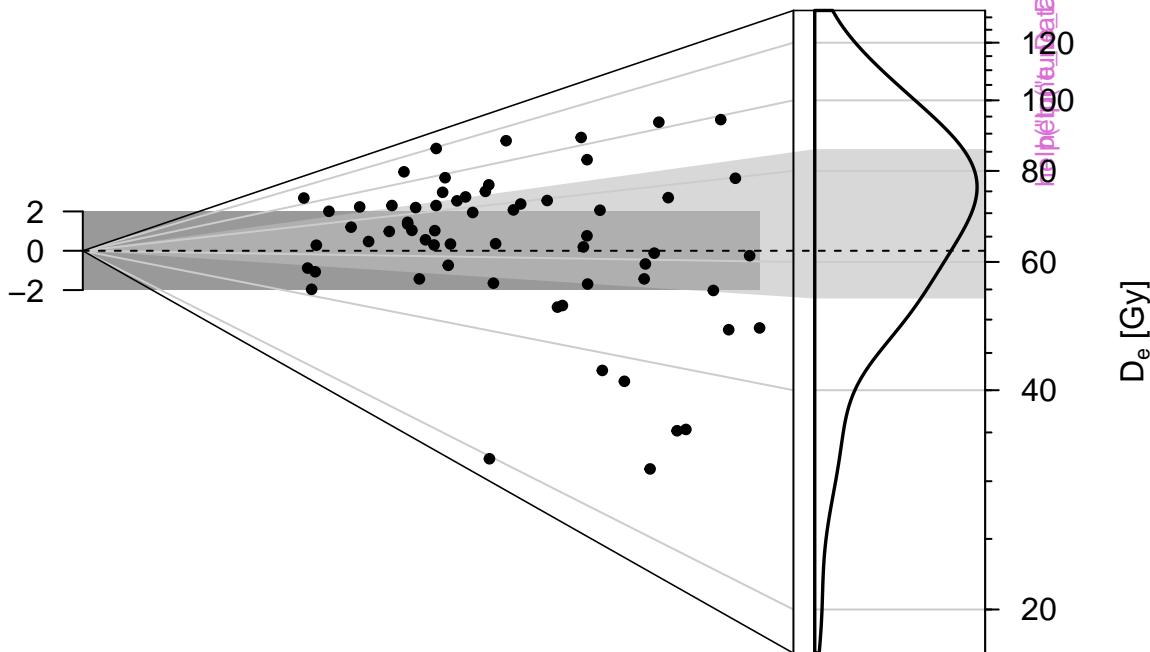


help("smooth_RLum")

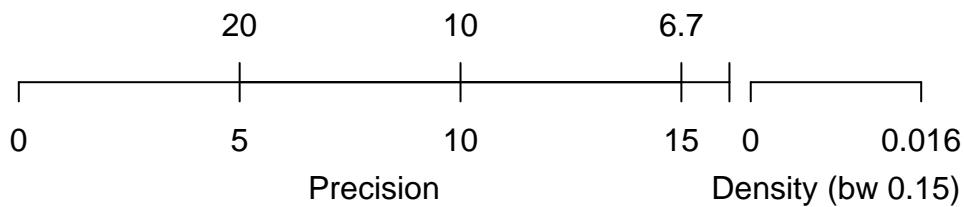
D_e distribution

n = 62 | mean = 66.01

Standardised estimate



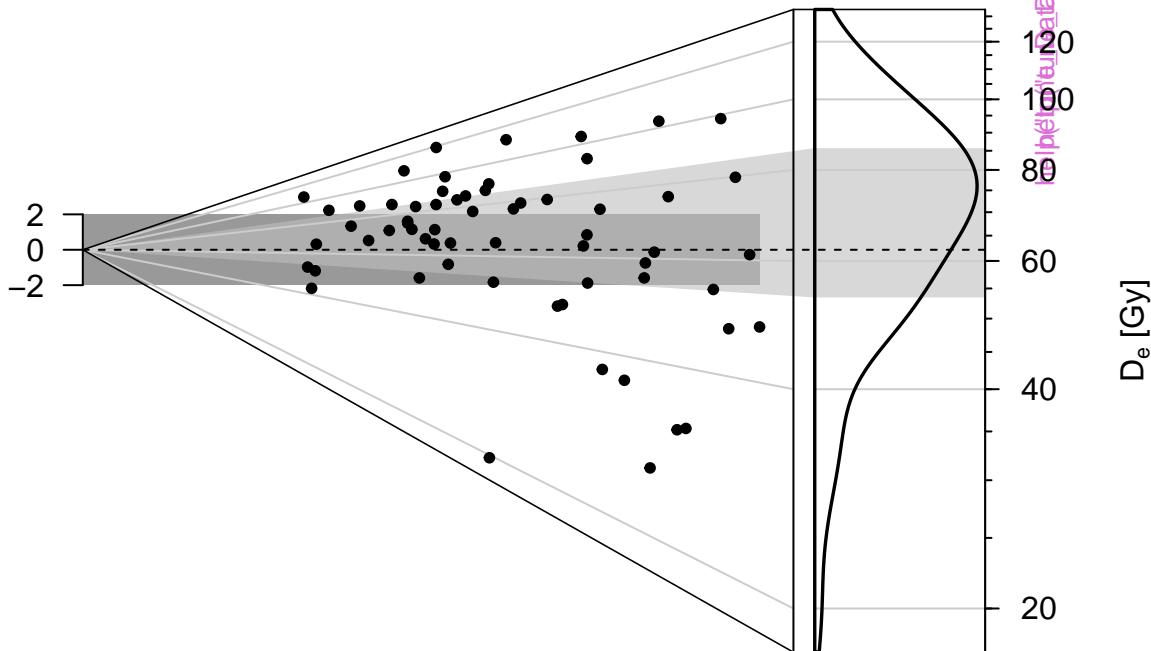
Relative standard error (%)



D_e distribution

n = 62 | mean = 66.01

Standardised estimate



Relative standard error (%)

