

# Package: kwb.1dbear (via r-universe)

November 20, 2024

**Title** R Package for Generic Calculation of Attenuation of PMT & Other Substances During Riverbank Filtration

**Version** 0.1.0

**Description** R package for generic calculation of attenuation of PMT & other substances during riverbank filtration.

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**URL** <https://github.com/KWB-R/kwb.1dbear>

**BugReports** <https://github.com/KWB-R/kwb.1dbear/issues>

**Encoding** UTF-8

**Roxygen** list(markdown = TRUE)

**RoxygenNote** 7.3.2

**Imports** dplyr, ggplot2, magrittr, pracma, rlang

**Suggests** covr, knitr, rmarkdown

**VignetteBuilder** knitr

**Repository** <https://kwb-r.r-universe.dev>

**RemoteUrl** <https://github.com/KWB-R/kwb.1dbear>

**RemoteRef** HEAD

**RemoteSha** 6774d91275a4ca1f5f0c62e303ab287c983286d1

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calculate_bear1d	<i>Calculate Bear 1D</i>
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### Description

Calculate Bear 1D

### Usage

```
calculate_bear1d(
  n_values,
  rs_values,
  foc_values,
  log_koc_values,
  hl_values,
  C0 = 1,
  D_values,
  v_values,
  t_values = max(hl_values * max(log_koc_values)),
  x_values
)
```

### Arguments

n_values	Porosity (-)
rs_values	density solids (g/g)
foc_values	fraction of organic matter
log_koc_values	min, max Koc for relevant compounds Nguyen et al 2020
hl_values	half life (T)
C0	initial concentration of the solute (M/L <sup>3</sup> )
D_values	coefficient of longitudinal dispersion (L <sup>2</sup> /T)
v_values	average linear ground water velocity (L/T)
t_values	time (T), default: max(hl_values * max(log_koc_values))
x_values	flow path distance (L)

### Value

Bear 1D results

**Examples**

```

bear1d_vienna <- calculate_bear1d(n_values = 0.15,
rs_values = 2.7,
foc_values = 0.002,
log_koc_values = c(1,2.9),
hl_values = c(500,2000),
C0 = 1,
D_values = 10,
v_values = 21.3,
t_values = seq(0, 350, by=1),
x_values = 141
)

```

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calculate\_Cx

*Calculate Cx*


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**Description**

Calculate Cx

**Usage**

```
calculate_Cx(x, t, v, D, retardation, C0, k)
```

**Arguments**

x	x
t	t
v	v
D	D
retardation	retardation
C0	initial concentration
k	k

**Value**

???

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plot_combined	<i>Plot Combined</i>
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**Description**

Plot Combined

**Usage**

```
plot_combined(bear1d_list, text_size = 20, line_width = 1.25, xbreaks = 200)
```

**Arguments**

bear1d_list	Bear1D list as retrieved by <a href="#">calculate_bear1d</a>
text_size	size of plot title and axis labels, default: 20
line_width	line width, default: 1.25
xbreaks	breaks on x axis, default: 200

**Value**

combined plot

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plot_heatmap	<i>Plot Heatmap</i>
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**Description**

Plot Heatmap

**Usage**

```
plot_heatmap(bear1d_list, rect_data = NULL, measured_C_C0 = NULL)
```

**Arguments**

bear1d_list	Bear1D list as retrieved by <a href="#">calculate_bear1d</a>
rect_data	data.frame with xmin/xmax/ymin/ymax parameters (default: NULL)
measured_C_C0	in percent (default: NULL)

**Value**

heatmap plot

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