

# Package ‘RDP’

January 20, 2025

**Title** The Ramer-Douglas-Peucker Algorithm

**Version** 0.3.0

**Description** Pretty fast implementation of the Ramer-Douglas-Peucker algorithm for reducing the number of points on a 2D curve. Urs Ramer (1972), ``An iterative procedure for the polygonal approximation of plane curves" <doi:10.1016/S0146-664X(72)80017-0>. David H. Douglas and Thomas K. Peucker (1973), ``Algorithms for the Reduction of the Number of Points Required to Represent a Digitized Line or its Caricature" <doi:10.3138/FM57-6770-U75U-7727>.

**License** GPL-3

**URL** <https://github.com/robertdj/RDP>

**Encoding** UTF-8

**RoxygenNote** 7.2.1

**LinkingTo** Rcpp

**Imports** Rcpp

**Suggests** testthat, withr, zeallot

**NeedsCompilation** yes

**Author** Robert Dahl Jacobsen [aut, cre]

**Maintainer** Robert Dahl Jacobsen <cran@dahl-jacobsen.dk>

**Repository** CRAN

**Date/Publication** 2023-07-05 22:13:04 UTC

## Contents

RDP-package . . . . .	2
RamerDouglasPeucker . . . . .	2
<b>Index</b>	<b>4</b>

---

RDP-package
RDP *package*


---

**Description**

Implementation of the [Ramer-Douglas-Peucker algorithm](#).

**Author(s)**

**Maintainer:** Robert Dahl Jacobsen <cran@dahl-jacobsen.dk>

**References**

Urs Ramer (1972), "An iterative procedure for the polygonal approximation of plane curves". *Computer Graphics and Image Processing* **1**, 244–256. doi:10.1016/S0146664X(72)800170.

David H. Douglas and Thomas K. Peucker (1973), "Algorithms for the Reduction of the Number of Points Required to Represent a Digitized Line or its Caricature". *Cartographica* **10**, 112–122. doi:10.3138/FM576770U75U7727.

**See Also**

Useful links:

- <https://github.com/robertdj/RDP>

---

RamerDouglasPeucker
*Simplify a curve using the Ramer-Douglas-Peucker algorithm.*


---

**Description**

Implements the [Ramer-Douglas-Peucker algorithm](#) for reducing the number of points on a curve.

**Usage**

```
RamerDouglasPeucker(x, y, epsilon, keep_index = FALSE)
```

**Arguments**

x	[numeric] The x values of the curve as a vector without NA values.
y	[numeric] The y values of the curve as a vector without NA values.
epsilon	[positive numeric(1)] The threshold for filtering outliers from the simplified curve.
keep_index	[logical] If TRUE, returns a column called index with the index locations of points that are kept.

**Details**

If there are no more than two points it does not make sense to simplify. In this case the input is returned without further checks of  $x$  and  $y$ . In particular, the input is not checked for NA values.

**Value**

A data.frame with  $x$  and  $y$  values of the simplified curve.

**Examples**

```
RDP::RamerDouglasPeucker(x = c(0, 1, 3, 5), y = c(2, 1, 0, 1), epsilon = 0.5)
RDP::RamerDouglasPeucker(x = c(0, 1, 3, 5), y = c(2, 1, 0, 1), epsilon = 0.5, keep_index = TRUE)
```

# Index

RamerDouglasPeucker, [2](#)

RDP (RDP-package), [2](#)

RDP-package, [2](#)