

# Package ‘MIRDD’

March 19, 2026

**Title** Diagnostic Tool by Multiple Imputation for Regression  
Discontinuity Designs

**Version** 0.1.0

**Description** Estimates local average treatment effects based on regression discontinuity designs (RDD) and multiple imputation regression discontinuity designs (MIRDD). It provides diagnostic tools for RDD by comparing results with those from MIRDD, as proposed in Takahashi (2023) <[doi:10.1080/03610918.2021.1960374](https://doi.org/10.1080/03610918.2021.1960374)>.

**License** GPL-3

**Encoding** UTF-8

**Imports** Amelia, rdrobust, stats, graphics

**RoxygenNote** 7.3.3

**NeedsCompilation** no

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**Repository** CRAN

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MIdiagRDD	<i>Diagnostic Tool by Multiple Imputation for Regression Discontinuity Designs</i>
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## Description

Estimates local average treatment effects based on regression discontinuity designs (RDD) and multiple imputation regression discontinuity designs (MIRDD). It provides diagnostic tools for RDD by comparing results with those from MIRDD.

**Usage**

```

MIdiagRDD(
  y,
  x,
  cut,
  seed = 1,
  M1 = 100,
  M2 = 5,
  M3 = 1,
  p2s1 = 1,
  emp = 0,
  bw = "mserd",
  ker = "triangular",
  bwidth = 1,
  p1 = 1,
  conf = 95,
  upper = 1,
  covs1 = NULL,
  up = NULL,
  lo = NULL
)

```

**Arguments**

y	A numeric vector of the outcome variable.
x	A numeric vector of the assignment variable (forcing variable).
cut	A numeric value indicating the cutoff point.
seed	A seed number for reproducibility. Default is 1.
M1	Number of imputations for MIRDD. Default is 100.
M2	Number of imputations for visualization. Default is 5.
M3	Number of imputations for specific plots. Default is 1.
p2s1	Integer for Amelia's p2s argument (0, 1, or 2). Default is 1.
emp	Amelia's empirical prior. Default is 0.
bw	Bandwidth selection method for rdrobust. Default is "mserd".
ker	Kernel function for rdrobust. Default is "triangular".
bwidth	Scaling factor for bandwidth. Default is 1.
p1	Polynomial order for rdrobust. Default is 1.
conf	Confidence level (0-100). Default is 95.
upper	If 1 (default), treatment is $x \geq \text{cut}$ . If 0, treatment is $x < \text{cut}$ .
covs1	Optional covariates for Amelia.
up	Optional upper bound for plots.
lo	Optional lower bound for plots.

**Value**

No return value, called for side effects (plotting and printing results).

**Examples**

```
# Example usage with dummy data
x <- runif(100, -1, 1)
y <- 0.5 * x + (x >= 0) + rnorm(100, 0, 0.1)
MIdiagRDD(y = y, x = x, cut = 0)
```

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