Differentially Private Topological Data Analysis

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The simulation results in the manuscript are reproducible with the attached R source. Users are required to install **TDA**, **dplyr**, and **purrr** packages in R before carrying out the code script below.

```r
source("../dptda.R")

seed = 1 # seed number
type = 2 # generating the example data set with the two circles.

noise_sd = 0.1    # jumping size for MH sampler
max_dim = 1       # maximum dimension of topological features
m0 = 0.2          # resolution of DTM
by = 0.05         # grid size of
n = 4000          # number of data points
dp_epsilon = 1    # privacy budget

output <- run_example(n = n, noise_sd = noise_sd, r = 1, max_dim = max_dim,
                      dp_epsilon = dp_epsilon, true_m0 = m0, m0 = m0,
                      by = by, seed = seed, type = type, remove_ldt=FALSE)
```