

# CosmoPhotoz

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This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS Word documents. For more details on using R Markdown see <http://rmarkdown.rstudio.com>.

When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

This is an R Markdown document to explain in simple terms the use of Generalized Linear Models into Astronomy reproducing the main results from Ewan et al (2014).

## Required libraries

```
require(CosmoPhotoz)
require(quantreg)
```

Load the data:

Take a look on the data

Number of PCs to account for 95% of data

Add the redshift column to the PCA projections of the Training sample

Store the PCA projections for the testing sample in the vector Testpc

Train the glm model using gamma family

Here you predict your photometric redshift from your photometric data

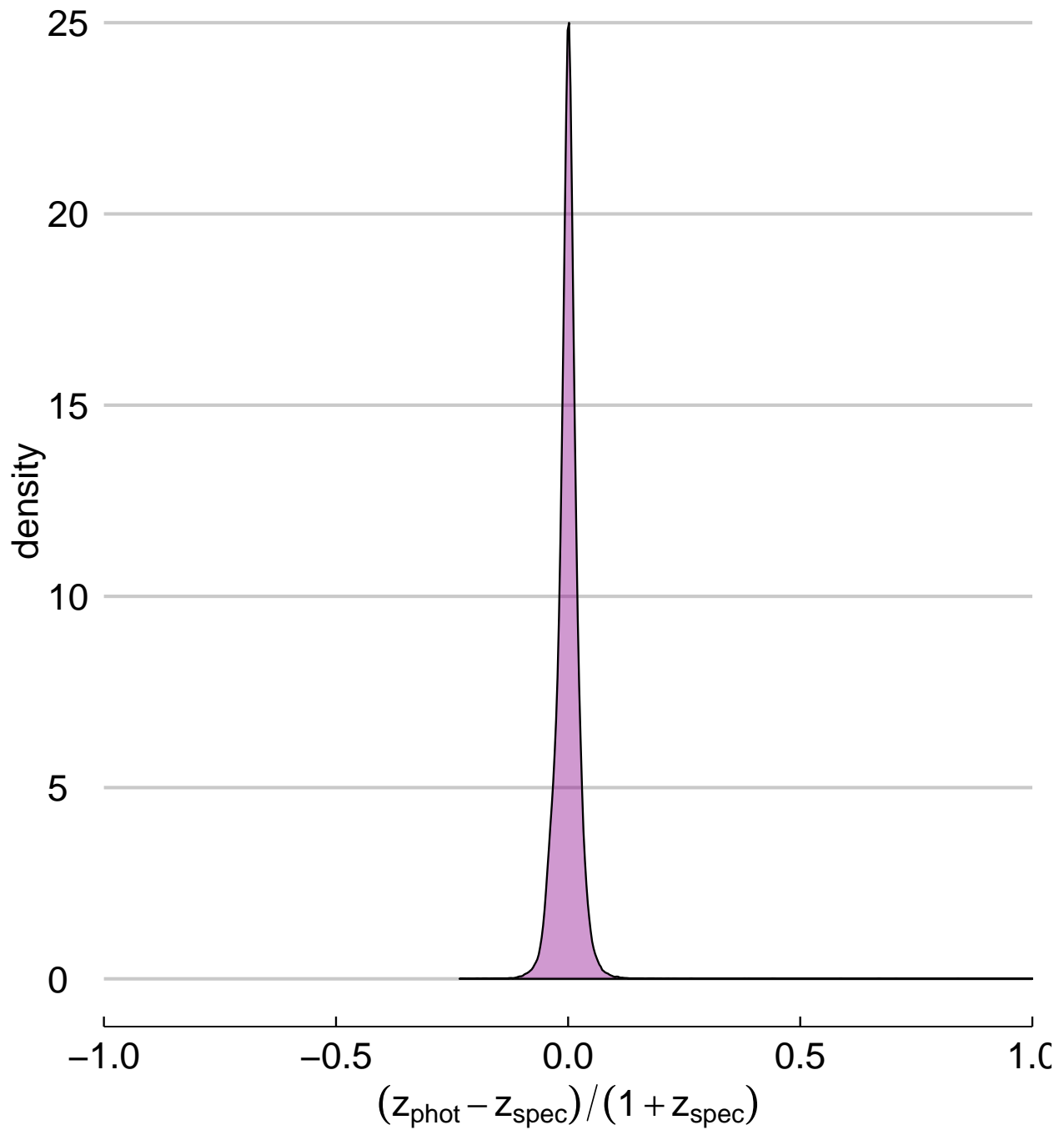
Get the redshifts from the testing sample

Compute basic diagnostic statistics

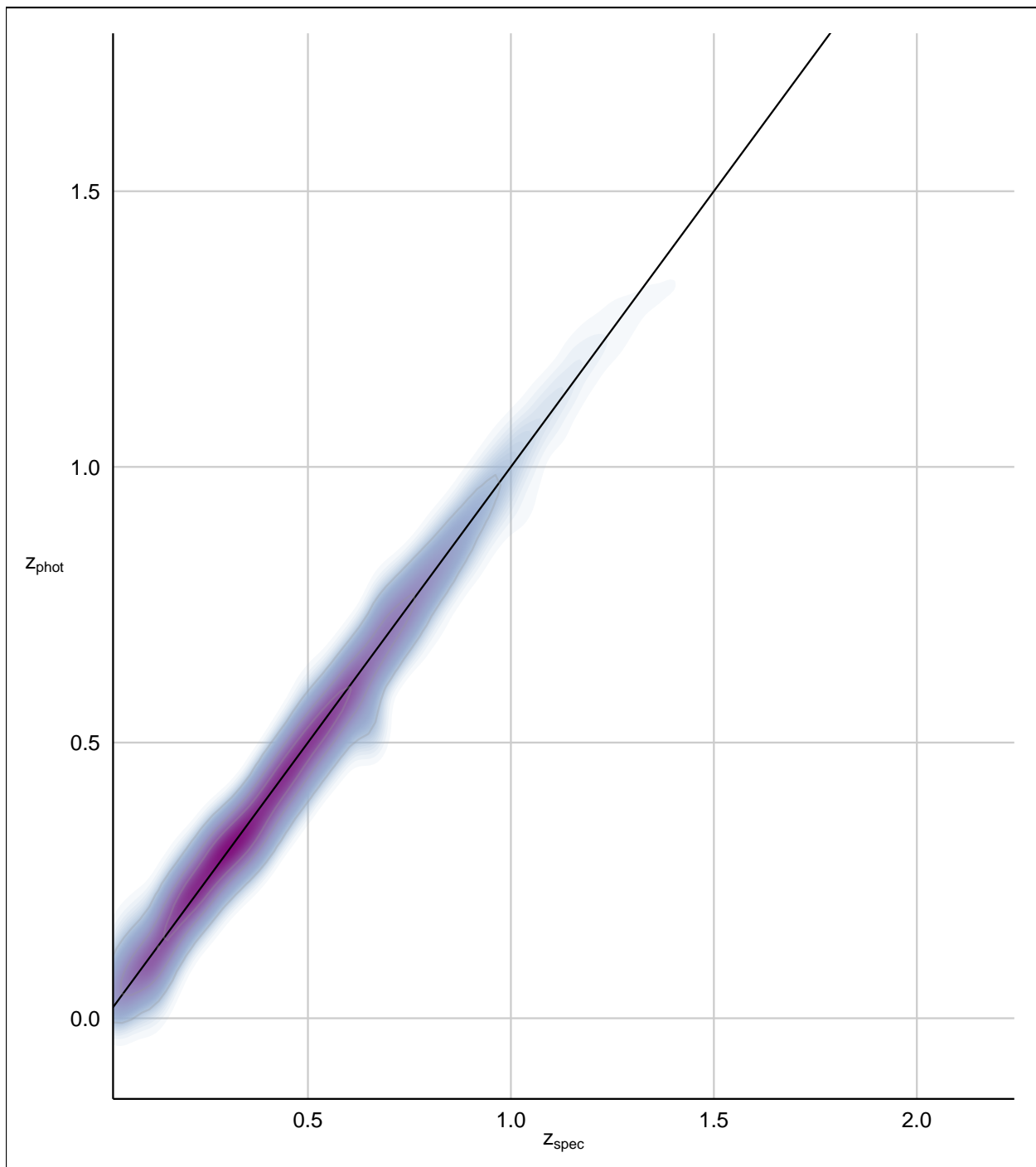
```
## $mean
## [1] 0.001059
##
## $sd
## [1] 0.0241
##
## $median
## [1] 9.868e-05
##
## $mad
## [1] 0.01763
##
## $rmse
## [1] 0.03401
##
## $outliers
## [1] "0.04%"
```

Create basic comparison plots

```
plotDiagPhotoZ(photoz, specz, type = "errordist")
```



```
plotDiagPhotoZ(photoz, specz, type = "predobs")
```



```
plotDiagPhotoZ(photoz, specz, type = "errorviolins")
```

```
## Warning: Removed 7 rows containing non-finite values (stat_ydensity).
```

