Simulations for Harmon & Nuismer

August 6th, 2016

1 Symmetrical transition rates

2 Simulation parameters:

```r
pSpec <- runif(n = 1000, min = 0, max = 2)
q01 <- runif(n = 1000, min = 0, max = 1)
q10 <- q01
ntaxa <- runif(n = 1000, min = 10, max = 100)
lambda <- runif(n = 1000, min = 0, max = 2)
```

3 ## Warning: Removed 112 rows containing missing values (geom_point).

4 ## Warning: Removed 108 rows containing missing values (geom_point).

5 ## Warning: Removed 44 rows containing missing values (geom_point).

6 ## Warning: Removed 33 rows containing missing values (geom_point).

7 ## Warning: Removed 204 rows containing missing values (geom_point).

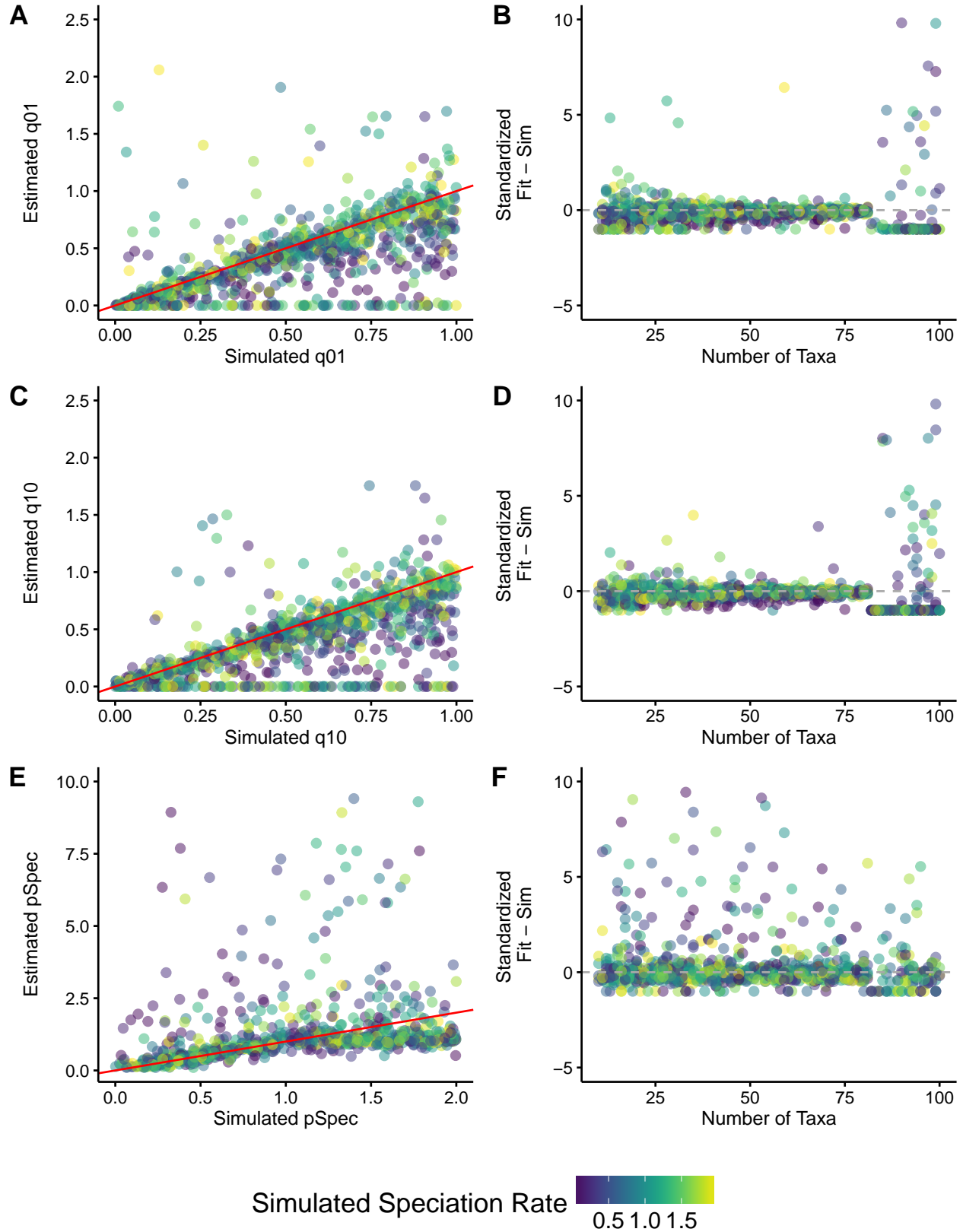8 ## Warning: Removed 137 rows containing missing values (geom_point).

Figure 1: A - Fitted q01 by Simulated q01; B - Standardized (Fitted q01 - Simulated q01) by Number of Taxa; C - Fitted q10 by Simulated q10; D - Standardized (Fitted q01 - Simulated q01) by Number of Taxa; E - Fitted pSpec by Simulated pSpec; F - Standardized (Fitted pSpec - Simulated pSpec) by Number of Taxa

9 Asymmetrical transition rates

10 Simulation parameters:

```r
pSpec <- runif(n = 1000, min = 0, max = 2)
q01 <- runif(n = 1000, min = 0, max = 1)
q10 <- q01
ntaxa <- runif(n = 1000, min = 10, max = 100)
lambda <- runif(n = 1000, min = 0, max = 2)
```

11 ## Warning: Removed 130 rows containing missing values (geom_point).

12 ## Warning: Removed 126 rows containing missing values (geom_point).

13 ## Warning: Removed 45 rows containing missing values (geom_point).

14 ## Warning: Removed 62 rows containing missing values (geom_point).

15 ## Warning: Removed 233 rows containing missing values (geom_point).

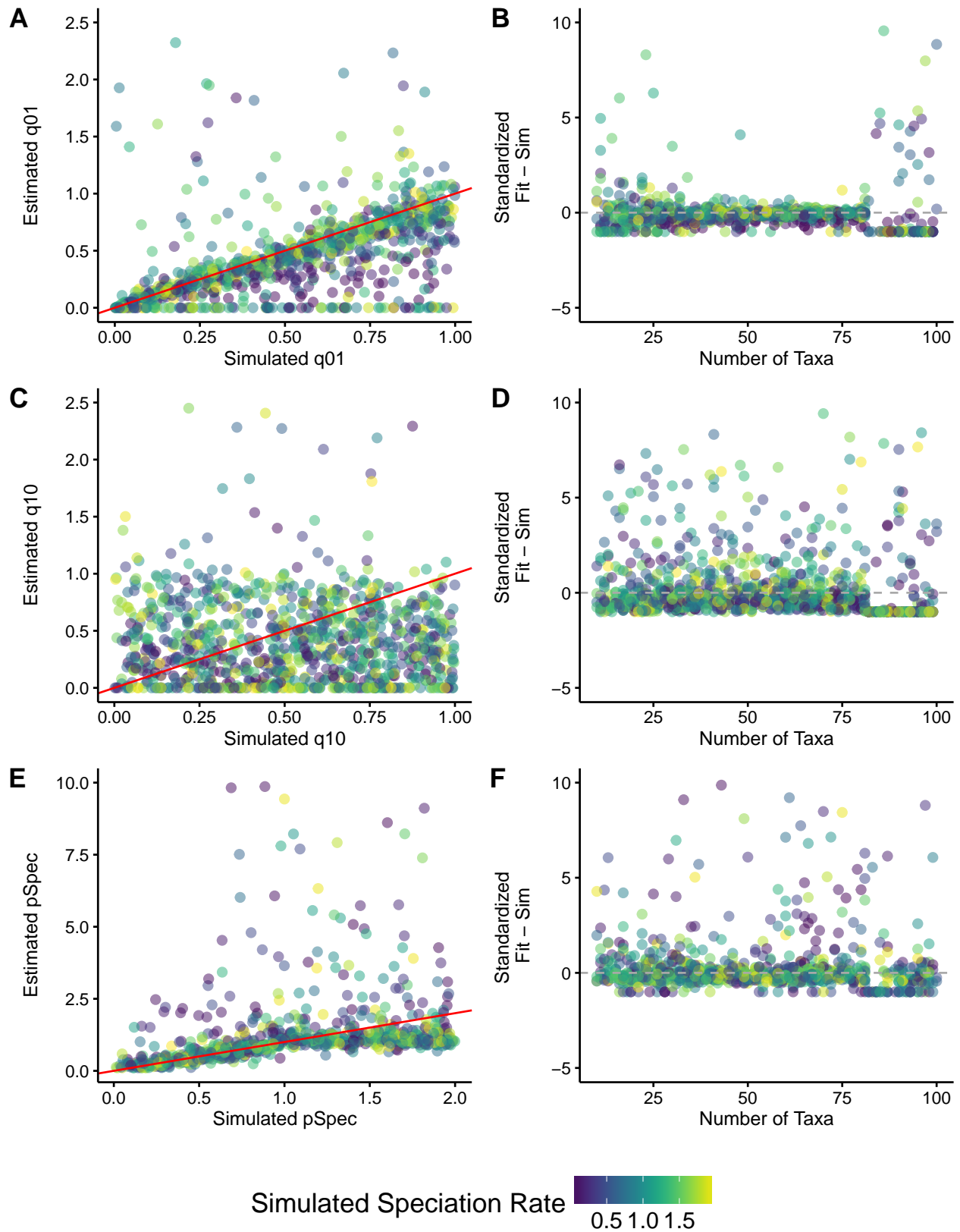16 ## Warning: Removed 145 rows containing missing values (geom_point).

Figure 2: A - Fitted q01 by Simulated q01; B - Standardized (Fitted q01 - Simulated q01) by Number of Taxa; C - Fitted q10 by Simulated q10; D - Standardized (Fitted q01 - Simulated q01) by Number of Taxa; E - Fitted pSpec by Simulated pSpec; F - Standardized (Fitted pSpec - Simulated pSpec) by Number of Taxa