

Constraining parameters to be the same in 2SpecConOccup

<http://www.phidot.org/forum/viewtopic.php?f=21&t=2974>

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Page 1 of 1

by **piklprado**

Posted: **Sat Mar 21, 2015 2:23 pm**

Greetings

Is there a way to constrain some of the parameters to be the same for the 2SpecConOccup model using RMark?

I'd like to fit 2-species occurence models without covariates but where

1- $rA = pA$

2- $rBA = rBa = pB$

3- $\psi iBa = \psi iBA$

Thanks

Paulo

Re: Constraining parameters to be the same in 2SpecConOccup

by **jlaake**

Posted: **Mon Mar 23, 2015 1:01 pm**

RMark was written with the general premise that different types of parameters would not share columns of the design matrix. With a few exceptions that is the case for the majority of models fitted in MARK. A notable exception is p and c in closed models because they are both capture probabilities. There are other models as well but the 2SpecConOccup models takes it to a new level and what you want in #1 and #2 is not supported by RMark. #3 is supported. To handle shared parameters I have defined pairs of parameters that are likely to share columns of the design matrix. One parameter is the dominant of the pair (eg p is dominant in the p-c pairing). A formula is provided for the dominant parameter and share=TRUE is added to the specification. When they are shared, do NOT also provide a formula for the other parameter.

So for example, with the closed model, the following creates a model in which p is varying by time and c is also varying by time with an additive difference on the link scale.

```
ee.closed.mt=mark(edwards.eberhardt,model="Closed",  
model.parameters=list(p=list(formula=~time+c,share=TRUE)))
```

The shared parameters for the 2SpecConOccup model are

ψiBA ψiBa

pA pB

rBA rBa

The parameter on the left is the dominant parameter. You can share any parameter with the MARK interface so you may want to use it for your models. You can see what parameters can be

shared with RMark by opening the file parameters.txt in Excel. That file is in the RMark subdirectory of your R library. It is best not to modify it but you can change the pairings if it suits you but you won't be able to share a column among 3 different types of parameters like in #2.

regards --jeff

Re: Constraining parameters to be the same in 2SpecConOccup

by **piklprado**

Posted: **Wed Mar 25, 2015 11:55 pm**

This provides a solution for most of my cases; thanks Jeff.

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All times are UTC - 5 hours [DST]
Page **1** of **1**