DELTA SCORING FUNCTION REFERENCE

version 0.1

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1 Introduction

This document describes the the set of functions and the way of their ussage for obtaining the DELTA SCORING approach for test evaluations.

2 Instalation

To install place the folder in the MATLAB path and rename it to +deltaScoring.

3 Ussage

Here a example of a simple ussage of the package.

Suppose the raw dichotomous item response id placed in varible itemScore.

To estimate the items delta by bootstrapping procedure

```
[ItemDelta, estimatedDeltaSE] = ...
        deltaScoring.estimate.itemDeltaBootstrap(itemScore);
```

is called. The resulted item deltas and the corresponding standard error of estimate are returned in variables ItemDelta, estimatedDeltaSE.

The classical person D-scores are calculated usind the response paterns in itemScore and already calculated item deltas.

```
personDscores = ...
        deltaScoring.scoring.dScore(ItemDelta,itemScore,opt.
           Dscore_method);
```

Here opt is a structure containing the options for he considered delta scoring model. It can be generated by

```
opt = deltaScoring.scoring.Options;
```

Here and after the default will be thw model RFM2. If a RFM3 model is aquared this can be stated in

```
opt.model = 3;
```

and the corresonding options should be passed to the functions.

The item properties location b and shape s can be obtained by

```
[params, CI, ~, Results] = ...
deltaScoring.estimate.logitDeltaFit(itemScore,personDscores,
   opt);
```

where *params* contains the matrix with corresponding parameters for any item in the test $[b, s]$. The first column corresponds to the location paramater b while the second represents the shape s. If the model is RMF3, the guessing parameter is in the third column.

The matrix *CI* is contains the 95% confidence interval of the estimated values. *Results* contains additional fitting parameters (for example MAD i available in *Results.MAD*).

The persons true scores can be calculated by

```
personTrueScores = ...
deltaScoring.scoring.trueScore(ItemDelta,ItemParameters,
   personDscores,opt);
```

and the SE

```
personTrueScoresSE = ...
deltaScoring.scoring.trueScoreSE(ItemDelta,ItemParameters,
   personDscores,opt);
```

4 Function reference