**Assess significance of extracted patterns**

1. **for** ***i*** = 1..***n*** patterns **do**

**for** ***j*** = 1..***k*** profiles in ***i*** pattern **do**

Calculate Pattern Correlation Score (PCS***j***) against ***k*** -1 profiles

Store PCS***j*** for ***j***th profile

In the end, calculate average of ***k*** PCS***j*** as normalized PCS***real***

**end**

**for** ***l*** = 1..10000 repeats

Randomly sample ***k*** profiles from the full dataset

**for** ***j*** = 1..***k*** profiles in ***i*** pattern **do**

Calculate Pattern Correlation Score (PCS***j***) against ***k*** -1 profiles

Store PCS***j*** for ***j***th profile

In the end, calculate average of ***k*** PCS***j*** as normalized PCS

**end**

**end**

A nominal p-value for the PCS***real*** was defined as the probability getting it by chance

**end**

1. p-values will be assigned with each ***i*** = 1..***n*** patterns as significant measure