**Towards Interactive Recommending in Model-based Collaborative Filtering Systems**

**Motivation**
- **Influence** of users on model-based CF systems mostly **limited** to (re-)rating single items
- Abstract models make it **difficult** to comprehend recommendation process

**Goal**
- Leverage the **full potential** of latent factor models as derived by conventional MF algorithms
- Extend a standard model-based CF system into a fully interactive recommender based on ...

**Choice-based Preference Elicitation**
- Provide recommendations at **cold-start** without requiring users to rate items
- Enable users in model-based CF systems to ...
  - **choose** between sets of sample items characteristic for certain dimensions of latent factor model
  - **express** preferences through **sequence of comparisons**

**Tag-enhanced Matrix Factorization**
- Leverage **content-boosted** techniques
- Provide **richer interaction** possibilities and improve **transparency**
- Enable users in model-based CF systems to ...
  - **select** tags to express preferences at **cold-start**
  - **weight** tags to manipulate **recommendations**
  - **critique** a recommended item
  - **examine** profile via tag-based explanations

**Method & Prototypes**
Enhance MF with additional data
1. \[ R = \begin{pmatrix} P & Q \\ \end{pmatrix} \]
2. \[ = \begin{pmatrix} 1 & 0 & 0 & 1 \\ 0 & 1 & 1 & 0 \\ \end{pmatrix} \]
3. \[ = \begin{pmatrix} 1 & 0 \end{pmatrix} \]

Derive user-tag relevance scores and factor-tag relations
4. \[ \begin{pmatrix} \end{pmatrix} \]
5. \[ \begin{pmatrix} \end{pmatrix} \]

**Blended Recommending**
- Integrate interactive information filtering mechanisms with recommendation methods in a **hybrid fashion**
- Enable users in model-based CF systems to ...
  - **exploit other** recommendation and filtering **techniques**
  - **express** preferences by selecting **facets** and **facet values**
  - **weight** influence of methods in **hybrid** configuration
  - **examine** the effect of these methods on the **results**

**Framework**
- **Recommendation** functionality implemented on top of Apache Mahout
- JSF-based web application **demonstrating** all application possibilities
- **Offline evaluation** suite based on RiVal benchmarking toolkit

**Demonstrator**
- **Multiperspective** web application and **user-controlled** recommender platform
- Holistically **integrates** all these different attempts to **interactive recommending**