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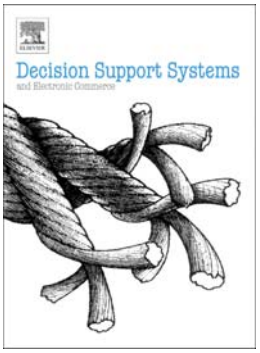

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An empirical study of natural noise management in group recommendation systems

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Abstract

Group recommender systems (GRSs) filter relevant items to groups of users in overloaded search spaces using information about their preferences. When the feedback is explicitly given by the users, inconsistencies may be introduced due to various factors, known as natural noise. Previous research on individual recommendation has demonstrated that natural noise negatively influences the recommendation accuracy, whilst it improves when noise is managed. GRSs also employ explicit ratings given by several users as ground truth, hence the recommendation process is also affected by natural noise. However, the natural noise problem has not been addressed on GRSs. The aim of this paper is to develop and test a model to diminish its negative effect in GRSs. A case study will evaluate the results of different approaches, showing that managing the natural noise at different rating levels reduces prediction error. Eventually, the deployment of a GRS with natural noise management is analysed.

Keywords: `group recommender systems`, `natural noise`, `collaborative filtering`

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