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Karina GIBERT : "The potentials of intelligent decision support systems in ecology"

- Actions - Deuxième séminaire "Méthodes et outils pour la fouille de données hétérogènes et multi-sources en écologie" - Résumés / summary
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New technologies made possible to get and store information of many different types from any ecological phenomenon. Currently, availability of data is not any more a limitation to understand reality. However, making a proper data exploitation to identify relevant decisional knowledge from it is still an open problem due to several reasons. On the one hand, the complexity of ecological problems requires new data mining methods that can deal with high degree interactions, evolving along time and space. Also, data quality, as management of Big

Data and distributed information systems are relevant issues in these field. On the other hand, even in the cases where data quality is guaranteed, even where intensive data mining is possible, weven where rich knowledge is extracted from data, it is still difficult to guarantee a direct impact of data mining to effective decision-making levels. Intelligent Decision Support Systems (IDSS) provide a framework to conduct the flow between data recording, proper dataexploitation, contextualization of data mining results, interpretation-support and results communication to stakeholders in such a way that decision-making can be really supported by objective information obtained from data in a fluent cycle. Multi-perspective analysis and integral approach are required in most of the cases, to get reliable knowledge for supporting real decisions. In this work, the characteristics of ecological data that cause poor performances in classical data mining will be discussed, the importance of data pre-processing steps will be analysed, the potentials of advanced data mining methods for different types of ecological applications will be introduced, and the potentials of IDSS to provide support to different kind of ecological decisions will be explored.

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