1	Title:	Research fronts in data envelopment analysis
	Author:	John S. Liu, Louis Y.Y. Lu, Wen-Min Lu
	Journal:	Omega, Volume 58, January 2016, Pages 33–45
	Abstract:	Research activities relating to data envelopment analysis (DEA) have grown at a fast rate recently. Exactly what activities have been carrying the research momentum forward is a question of particular interest to the research community. The purpose of this study is to find these research activities, or research fronts, in DEA. A research front refers to a coherent topic or issue addressed by a group of research articles in recent years. The large amount of DEA literature makes it difficult to use any traditional qualitative methodology to sort out the matter. Thus, this study applies a network clustering method to group the literature through a citation network established from the DEA literature over the period 2000 to 2014. The keywords of the articles in each discovered group help pinpoint its research focus. The four research fronts identified are "bootstrapping and two-stage analysis", "undesirable factors", "cross-efficiency and ranking", and "network DEA, dynamic DEA, and SBM". Each research front is then examined with key-route main path analysis to uncover the elements in its core. In addition to presenting the research fronts, this study also updates the main paths and author statistics of DEA development since its inception and compares them with those reported in a previous study.
	Database:	ScienceDirect

2	Title:	User reward programs in online social media
	Author:	Fouad H. Mirzaei, Fredrik Ødegaard, Xinghao Yan
	Journal:	Omega, Volume 57, Part B, December 2015, Pages 123–144
	Abstract:	Online social media (OSMs) have become a popular and growing Internet phenomenon, as exemplified by the millions of followers of websites like YouTube, Twitter, and Facebook. Given the Internet's ease of access and the high degree of competition to attract users to these sites, a question arises as to whether OSMs should develop revenue-sharing programs as a way to reward their contributing users. We present an ex ante asymmetric duopoly OSM game, where heterogeneous users are either active or passive with respect to each OSM. The game includes two steps: First, the OSMs simultaneously announce their rewards for active users; and second, based on their preference, users choose their level of contribution with respect to each OSM. We show that this game has a unique Nash equilibrium in pure strategies, and we identify the conditions under which a symmetric equilibrium exists, despite the asymmetry between the OSMs. Moreover, at equilibrium, no user chooses to contribute content exclusively to the less favourable OSM, even when the more favourable

firm shares a lower reward than the less favourable firm. Furthermore, in some circumstances, a higher asymmetry can diminish the net revenue of the more favourable firm and vice versa.

Database: ScienceDirect

3

Title:	Climate policy modeling: An online SCI-E and SSCI based literature review
Author:	Yi-Ming Wei, Zhi-Fu Mi, Zhimin Huang
Journal:	Omega, Volume 57, Part A, December 2015, Pages 70–84

Abstract: This study utilizes the bibliometric method on climate policy modeling based on the online version of SCI-E from 1981 to 2013 and SSCI from 2002 to 2013, and summarizes several important research topics and methodologies in the field. Publications referring to climate policy modeling are assessed with respect to quantities, disciplines, most productive authors and institutes, and citations. Synthetic analysis of keyword frequency reveals six important research topics in climate policy modeling which are summarized and analyzed. The six topics include integrated assessment of climate policies, uncertainty in climate change, equity across time and space, endogeneity of technological change, greenhouse gases abatement mechanism, and enterprise risk in climate policy models. Additionally, twelve types of models employed in climate policy modeling are discussed. The most widely utilized climate policy models are optimization models, computable general equilibrium (CGE) models, and simulation models.

Database: ScienceDirect

4

Title:	Probabilistic travel time progression and its application to automatic vehicle identification data
Author:	Alfredo Nantes, Dong Ngoduy, Marc Miska, Edward Chung
Journal:	Transportation Research Part B: Methodological, Volume 81, Part 1, November 2015, Pages 131–145

Abstract: Travel time has been identified as an important variable to evaluate the performance of a transportation system. Based on the travel time prediction, road users can make their optimal decision in choosing route and departure time. In order to utilise adequately the advanced data collection methods that provide real-time different types of information, this paper is aimed at a novel approach to the estimation of long roadway travel times, using Automatic Vehicle Identification (AVI) technology. Since the long roads contain a large number of scanners, the AVI sample size tends to reduce and, as such, computing the distribution for the total road travel time becomes difficult. In this work, we introduce a probabilistic framework that extends the deterministic travel time progression method to dependent random variables and enables the off-line estimation of road travel time distributions. In the proposed method, the accuracy of the estimation does not depend on the size of the sample over the entire corridor, but only on the amount of historical data that is available for each link. In practice, the system is also robust to small link samples and can be used to detect outliers within the AVI data.

Database: ScienceDirect

5	Title:	Unifying the proper cores and dominance cores of cooperative fuzzy games
	Author:	Hsien-Chung Wu
	Journal:	Fuzzy Optimization and Decision Making, September 2015, Volume 14, Issue 3, pp 243-263
	Abstract:	The purpose of this paper is to investigate the equalities of different types of proper cores and dominance cores for the general worth function (v) without assuming it to be nonnegative. The different sufficient conditions are provided in this paper to guarantee the equalities of different proper cores and dominance cores for this general situation.
	Database:	SpringerLink

6	Title:	Stability in mean for uncertain differential equation
	Author:	Kai Yao, Hua Ke, Yuhong Sheng
	Journal:	Fuzzy Optimization and Decision Making, September 2015, Volume 14, Issue 3, pp 365-379
	Abstract:	Canonical process is an uncertain process with stationary and independent normal increments, and the uncertain differential equation is a differential equation driven by canonical process. So far, the concept of stability in measure for uncertain differential equations has been proposed. This paper presents a concept of stability in mean for uncertain differential equations, and it gives a sufficient condition for an uncertain differential equation being stable in mean. In addition, it discusses the relationship between stability in mean and stability in measure.
	Database:	SpringerLink

7	Title:	Price competition of manufacturers in supply chain under a fuzzy decision environment
	Author:	Shengju Sang
	Journal:	Fuzzy Optimization and Decision Making, September 2015, Volume 14, Issue 3, pp 335-363
	Abstract:	This paper considers supply chain models with two competitive manufacturers and a common retailer that sells products of both manufacturers under a fuzzy decision environment. The parameters of demand function and manufacturing cost are treated as fuzzy variables. Two manufacturers and one retailer are assumed to pursue three different power balance scenarios: Manufacturer-Stackelberg, Retailer-Stackelberg and Vertical-Nash games. For each case, the optimal solutions of the expected value and two chance-constrained programming models are derived. Finally, numerical examples are provided to illustrate the results of proposed models. It is shown that in fuzzy models, the different scenarios affect the optimal pricing strategies, and the confidence level of the profits for supply chain members affects the optimal solutions.
	Database:	SpringerLink

8	Title:	[The impact of the distance-dependent promotional effect on the promotion cost sharing decision](#)
	Author:	Gwo-Ji Sheen, Shih-Yen Wang & Yingchieh Yeh
	Journal:	International Journal of Systems Science, Volume 47, Issue 3, 2016, pages 544-560
	Abstract:	This paper considers the promotion cost sharing decision between a supplier and a retailer. The customer demand is affected by both national and local promotional effects while the local promotional effect on a customer is dependent on the distance between the retailer and this customer. We propose a continuous approximation approach to modelling the sum of the customer demand in the whole market area served by the retailer. A model is provided to help managers decide on the retail price, the local advertising expenditure, the national advertising expenditure, and the supplier participation rate, with consideration of the influence of distance on the promotional effect. We also find that the supplier's promotion cost sharing rate increases as the market size increases or the influence of distance on the promotional effect decreases. A numerical example is given to show that the nature of distance-dependent promotional effect has a significant impact on the decisions and profits.
	Database:	Taylor & Francis Journals

9	Title:	[Graph-balancing algorithms for average consensus over directed networks](#)
	Author:	Yuan Fan, Runzhe Han & Jianbin Qiu
	Journal:	International Journal of Systems Science, Volume 47, Issue 1, 2016, pages 135-148
	Abstract:	Consensus strategies find extensive applications in coordination of robot groups and decision-making of agents. Since balanced graph plays an important role in the average consensus problem and many other coordination problems for directed communication networks, this work explores the conditions and algorithms for the digraph balancing problem. Based on the analysis of graph cycles, we prove that a digraph can be balanced if and only if the null space of its incidence matrix contains positive vectors. Then, based on this result and the corresponding analysis, two weight balance algorithms have been proposed, and the conditions for obtaining a unique balanced solution and a set of analytical results on weight balance problems have been introduced. Then, we point out the relationship between the weight balance problem and the features of the corresponding underlying Markov chain. Finally, two numerical examples are presented to verify the proposed algorithms.
	Database:	Taylor & Francis Journals

10	Title:	[Learning accurate very fast decision trees from uncertain data streams](#)
	Author:	Chunquan Liang, Yang Zhang, Peng Shi & Zhengguo Hu
	Journal:	International Journal of Systems Science, Volume 46, Issue 16, 2015, pages 3032-3050

Abstract:	Most existing works on data stream classification assume the streaming data is precise and definite. Such assumption, however, does not always hold in practice, since data uncertainty is ubiquitous in data stream applications due to imprecise measurement, missing values, privacy protection, etc. The goal of this paper is to learn accurate decision tree models from uncertain data streams for classification analysis. On the basis of very fast decision tree (VFDT) algorithms, we proposed an algorithm for constructing an uncertain VFDT tree with classifiers at tree leaves (uVFDTc). The uVFDTc algorithm can exploit uncertain information effectively and efficiently in both the learning and the classification phases. In the learning phase, it uses Hoeffding bound theory to learn from uncertain data streams and yield fast and reasonable decision trees. In the classification phase, at tree leaves it uses uncertain naive Bayes (UNB) classifiers to improve the classification performance. Experimental results on both synthetic and real-life datasets demonstrate the strong ability of uVFDTc to classify uncertain data streams. The use of UNB at tree leaves has improved the performance of uVFDTc, especially the any-time property, the benefit of exploiting uncertain information, and the robustness against uncertainty.
Database:	Taylor & Francis Journals