



江漢大學



# Program Overview

14<sup>th</sup> International Conference on  
Data Envelopment Analysis,  
Wuhan, China, May 23 to 26, 2016

# Program Overview



14<sup>th</sup> International Conference on Data Envelopment Analysis, Wuhan, China, May 23 to 26, 2016

**Lei Chen**, Jiangnan University, China

**Rajiv Banker**, Temple University, USA

**Subhash Ray**, University of Connecticut, USA

**Ali Emrouznejad**, Aston University, UK





# Program Overview

## Monday (May 23, 2016) → Room: "Boya"

07:30–20:00	Registration
<b>08:30 – 09:45</b>	<b>Tutorial #1: Selection of Inputs and Outputs in DEA</b>
09:45 - 10:00	Coffee Break
<b>10:00 - 11:15</b>	<b>Tutorial #2: Efficiency Analysis with Ratio Measure</b>
11:15 - 11:30	Coffee Break
<b>11:30 - 12:45</b>	<b>Tutorial #3: Benchmarking Software</b>
12:45 - 14:00	Lunch
<b>14:00 - 15:15</b>	<b>Tutorial #4: Introduction to Two-stage DEA Models</b>
15:15 - 15:30	Coffee Break
<b>15:30 - 16:45</b>	<b>Tutorial #5: Stochastic DEA</b>
16:45 - 17:00	Coffee Break
<b>17:00 - 18:15</b>	<b>Tutorial #6: Undesirable Outcomes and Production Theory</b>
18:30-21:00	Welcome Reception

## Tuesday (May 24, 2016)

08:00–18:00	Registration
09:00 - 09:30	Opening Session (Room: "Boya")
09:45 - 11:00	Session 1 (4 parallel venues)
11:00 - 11:30	Coffee Break
11:30 - 12:45	Session 2 (4 parallel venues)
12:45 - 14:00	Lunch
14:00 - 15:15	Journal session and getting published (Room: "Boya")
15:15 - 16:00	Coffee Break & Group photo
16:00 - 17:30	Session 3 (4 parallel venues)
18:30 - 21:00	Gala Dinner (Location: Ballroom "Rende")

### **Wednesday (May 25, 2016)**

08:00–12:00	Registration
08:30 - 10:00	Session 4 (4 parallel venues)
10:00 - 10:30	Coffee Break
10:30 - 12:00	Session 5 (4 parallel venues)
12:00 - 13:30	Lunch
13:30 - 19:00	Half Day City Tour in Wuhan
19:00 - 22:00	Cruise Dinner on the Yangtze River

### **Thursday (May 26, 2016)**

08:00–12:00	Registration
09:00 - 10:30	Session 6 (4 parallel venues)
10:30 - 11:00	Coffee Break
11:00 - 12:30	Session 7 (4 parallel venues)
12:30 - 14:00	Lunch
14:00 - 15:00	Session 8 (4 parallel venues)
15:00 - 15:30	Coffee Break
15:30 - 17:00	Past & Future and Farewell session (Room: "Xiande A")

# Detailed Schedule of Presentations



**Tuesday (May 24, 2016)**

**09:45 - 11:00**

**Session 1 (Room: "Boya"): DEA Modeling and Algorithm**  
**Chair: Yongjun Li**

**DEA2016: P-130**

**Using the Spatial Econometric Approach to Analyze the Impacts of Technical efficiency from CCDEA Model at the Provincial Level in Vietnam**

Nguyen Khac Minh, Pham Anh Tuan and Pham Van Khanh

**DEA**

**DEA2016: P-112**

**An Out-of-Sample Evaluation Framework for DEA**

Jamal Ouenniche and Kaoru Tone

**DEA2016: P-108**

**A Data-driven Prediction Approach based on Data Envelopment Analysis: An Application to NBA Teams' Performance**

Yongjun Li and Lizheng Wang

**Tuesday (May 24, 2016)**

**09:45 - 11:00**

**Session 2 (Room: "Xiande B"): Applications of DEA in Banking and Finance**  
**Chair: Gloria Rodriguez Lozano**

**DEA2016: P-064**

**A Centralized Dynamic Approach for Measuring the Efficiency of Cooperative Banks in Germany**

Anna Theresa Heye-Enneking, Mohsen Afsharian and Heinz Ahn

**DEA2016: P-136**

**Comparison between Conventional Banking and Islamic Banking in terms of X-Efficiency using Data Envelopment Analysis and Malmquist Productivity Index Analysis**

Shamim Ara

**DEA2016: P-086**

**Financial inclusion in Colombia: evolution and relative efficiency**

Gloria Rodriguez Lozano

**Tuesday (May 24, 2016)**

**09:45 - 11:00**

**Session 3 (Room: "Boxue A"): Applications of DEA in Eco-Efficiency**

**Chair: Guoliang Yang**

**DEA2016: P-139**

**Nonparametric Measures of Efficiency in the Presence of Undesirable Outputs: An Inter-country Analysis of GDP and Pollution**

Subhash Ray, Kankana Mukherjee and Anand Venkatesh

**DEA2016: P-011**

**Evaluating productive efficiency of pollution-generating processes: review of theories and applications**

Sheng Ang and Chien-Ming Chen

**DEA2016: P-026**

**Eco-efficiency considering CO2 emissions and data envelopment analysis: A structured literature review**

Guoliang Yang, Ali Emrouznejad and Marianna Marra

**Tuesday (May 24, 2016)**

**09:45 - 11:00**

**Session 4 (Room: "Boxue B"): Applications of DEA**

**Chair: Kristiaan Kerstens**

**DEA2016: P-075**

**Assessing Performance and Productivity Growth of Veterans  
Medical Beauty Centres in Taiwan Using DEA and BSC**

Ling-Chu Chien and Shinn Sun

**DEA2016: P-176**

**A New Input-Oriented Plant Capacity Notion: Definition and  
Empirical Comparison**

Giovanni Cesaroni, Kristiaan Kerstens and Ignace Van de  
Woestyne

**Tuesday (May 24, 2016)**

**11:30 - 12:45**

**Session 1 (Room: "Boya"): DEA Modeling and Algorithm**

**Chair: Finn R. Førsund**

**DEA2016: P-141**

**Different Estimation Effects between Inverse CCR and BCC model**

Ruoyang Liu and Jinchuan Cui

**DEA2016: P-017**

**Recognizing directional congestion in integer-valued DEA**

Mohammad Khoveyni and Robabeh Eslami

**DEA2016: P-114**

**An approach for improving the frontier in the DEA models**

Vladimir E. Krivonozhko, Finn R. Førsund and Andrey V. Lychev

**Tuesday (May 24, 2016)**

**11:30 - 12:45**

**Session 2 (Room: "Xiande B"): Applications of DEA in Banking and Finance**

**Chair: Mohsen Afsharian**

**DEA2016: P-068**

**A DEA-based Incentives System for Centrally Managed Multi-Unit Organizations**

Mohsen Afsharian, Heinz Ahn and Emmanuel Thanassoulis

**DEA2016: P-003**

**An Integrated Approach of Data Envelopment Analysis and Boosted Generalized Linear Mixed Models for Efficiency Assessment**

Imad Bou-Hamad, Abdel Latef Anouze and Denis Larocque

**DEA2016: P-040**

**Allocation of potential cooperative gains based on efficiency analysis**

Jianhui Xie

**Tuesday (May 24, 2016)**

**11:30 - 12:45**

**Session 3 (Room: "Boxue A"): Applications of DEA in Agriculture**

**Chair: Tomas Balezentis**

**DEA2016: P-097**

**An allocation Malmquist index with an application in the China agricultural industry**

Nan Zhu, Wei Wei, Yun Zhang and Ali Emrouznejad

**DEA2016: P-008**

**Carbon Emission in the European Union Agriculture: Driving Forces and Possibilities for Reduction**

Tomas Balezentis, Tianxiang Li, Irena Krisciukaitiene and Rasa Melnikiene



**DEA2016: P-037**

**Abatement costs of Emissions from Crop Residue Burning in major crop producing regions of China: Using a DEA method**

Lingling Hou, Dana Hoag, Jikun Huang and Catherine Keske

**Tuesday (May 24, 2016)**

**11:30 - 12:45**

**Session 4 (Room: "Boxue B"): Applications of DEA in Health and Hospital Efficiency**

**Chair: Ali Al-Badi**

**DEA2016: P-074**

**Evaluation and Selection of Domestic Pharmaceutical Suppliers for Yuli Psychiatric Hospital in Eastern Taiwan Using DEA and AHP**

Hsin-Yi Tsai and Shinn Sun

**DEA2016: P-143**

**How ICT is affecting the efficiency of healthcare system in Tunisia and Oman: A dynamic assessment using Malmquist Index**

Ali Al-Badi, Khamis Al-Gharbi, Amira Tlija and Said Gattoufi

**DEA2016: P-156**

**Performance Assessment of Public Hospitals in Saint Petersburg: Application of SFA and DEA Models with Undesirable Output**

Yuri Fedotov and Kazimir Iablonskii

**Tuesday (May 24, 2016)**

**16:00 - 17:30**

**Session 1 (Room: "Boya"): DEA Modeling and Algorithm**

**Chair: Ole Bent Olesen**

**DEA2016: P-024**

**Cost minimizing target setting onto the Pareto-efficient frontier in DEA: A mixed integer linear programming approach**

Sheng Ang, Qingxian An and Feng Yang

**DEA2016: P-051**

**An improved Afriat-Diewert-Parkan nonparametric production function estimator**

Ole Bent Olesen and John Ruggiero

**DEA2016: P-069**

**DEA-based activity planning with information asymmetry under different production technologies**

Jingjing Ding and Chenpeng Feng

**DEA2016: P-179**

**Relations between DEA and DEA-R based on value efficiency**

Mohamad Reza Mozaffari

**Tuesday (May 24, 2016)**

**16:00 - 17:30**

**Session 2 (Room: "Xiande B"): Applications of DEA in Banking and Finance**

**Chair: Hirofumi Fukuyama**

**DEA2016: P-055**

**Measurement of Bank Performance: A DEA Approach with Nonperforming Loans and Carryovers**

Hirofumi Fukuyama and William Weber

**DEA2016: P-043**

**Developing a Model for Determining Corporate Performance after Bank Acquisition**

Victor Boadu, Philip Serumaga-Zake and Jan Kruger

**DEA2016: P-137**

**Efficiency Analysis of Group Banks of Bangladesh in Managing Non-Performing Loans (NPL) using Data Envelopment Analysis (DEA)**

Shamim Ara and Hazera Akter

**Tuesday (May 24, 2016)**

**16:00 - 17:30**

**Session 3 (Room: "Boxue A"): Applications of DEA in Energy / Electricity /Water Industry**

**Chair: Qingyou Yan**

**DEA2016: P-025**

**Regional energy efficiency evaluation using two-stage, semi-parametric models and bootstrap technology**

Yanmin Shao, Yan Shang and Hong Yan

**DEA2016: P-032**

**Emissions trading and abatement cost savings in China's thermal power industry**

Ke Wang

**DEA2016: P-132**

**Chinese regional energy-economy-environment efficiency analysis based on the 3E DEA model**

Qingyou Yan and Xu Wang

**DEA2016: P-204**

**EFFICIENCY GAINS IN CROATIAN ELECTRICITY DISTRIBUTION CENTERS FOLLOWING INDUSTRY STRUCTURE CHANGES**

Maja Mihelja Zaja, Rajiv Banker, Shunlan Fang, Dubravko Hunjet, Luka Neralic, Richard Wendell and Ante Zaja

**Tuesday (May 24, 2016)**

**16:00 - 17:30**

**Session 4 (Room: "Boxue B"): Applications of DEA in Health and Hospital Efficiency**

**Chair: Shinn Sun**

**DEA2016: P-029**

**Technical efficiency of public insurance health centers in Gezira State of Sudan**

Almoghira Abdallah

**DEA2016: P-073**

**Performance Measurement and Productivity Growth of Hemodialysis Rooms of Veterans Branch Hospitals in Taiwan Using DEA and BSC**

Fu-Fen Li and Shinn Sun

**DEA2016: P-058**

**Quantile-DEA Ranking Method for Multi-Attribute Decision Making Problems with Interval Data**

Song Han and Quanling Wei

**DEA2016: P-063**

**Performance Measurement and Productivity Growth of Veterans Branch Hospitals in Taiwan Using DEA and BSC**

Mei-Fang Hsu and Shinn Sun

**Wednesday (May 25, 2016)**

**08:30 - 10:00**

**Session 1 (Room: "Xiande A"): DEA Modeling and Algorithm**

**Chair: Luka Neralic**

**DEA2016: P-186**

**Feature Selection for Classification Using Data Envelopment Analysis**

Yishi Zhang

**DEA2016: P-105**

**Discriminating power of DEA and selecting the number of inputs, outputs versus number of DMUs: A simulation study**

Yongjun Li, Xiao Shi, Jie Liu and Ali Emrouznejad

**DEA2016: P-205**

**ALGORITHMIC APPROACHES TO SENSITIVITY AND STABILITY ANALYSIS IN DEA**

Luka Neralic

**DEA2016: P-022**

**New super efficiency method based on a modification of the Enhanced Russell model**

Mohammad Izadikhah

**Wednesday (May 25, 2016)**

**08:30 - 10:00**

**Session 2 (Room: "Xiande B"): Applications of DEA in Banking and Finance**

**Chair: Iveta Palecková**

**DEA2016: P-020**

**Efficiency contribution patterns in Chinese commercial banks**

Ning Zhu, Bing Wang and Zhiqian Yu

**DEA2016: P-113**

**A DEA-based Framework for Assessing Banks Risk Profiles**

Skarleth Carrales and Jamal Ouenniche

**DEA2016: P-159**

**Efficiency of SMEs Financed by Conventional and Non-conventional Banks: Bangladesh Perspective**

Mohammad Masuduzzaman, Mahfuza Akther and Shamim Ara

**DEA2016: P-101**

**Efficiency of the banking industry in Romania and Bulgaria: Application of the Dynamic DEA**

Iveta Palecková

**Wednesday (May 25, 2016)**

**08:30 - 10:00**

**Session 3 (Room: "Boxue A"): Applications of DEA in Agriculture**

**Chair: Nataliya Plesha**

**DEA2016: P-194**

**INEFFICIENCY OF VIETNAMESE PANGASIUS FARMING: A DATA ENVELOPMENT ANALYSIS**

Ngoc Thi Anh Pham, Miranda Meuwissen, Tru Cong Le, Roel Bosma, Johan Verreth and Alfons Oude Lansink

**DEA2016: P-154**

**Production Efficiency in Chinese Agriculture: An Assessment of the Post Economic Reforms Years**

Wenqiang Bao, Nataliya Plesha and Subhash Ray

**DEA2016: P-168**

**Estimation of the Opportunity Cost of Pollution Abatement:  
Interstate Analysis of US Agriculture**

Nataliya Plesha and Subhash Ray

**Wednesday (May 25, 2016)**

**08:30 - 10:00**

**Session 4 (Room: "Boxue B"): Other DEA Applications**

**Chair: Mark Anderson**

**DEA2016: P-140**

**Fundamental Analysis and Firm Efficiency**

Mark Anderson and Dongning Yu

**DEA2016: P-018**

**Dynamic returns to scale and most productive scale size in DEA  
with negative data**

Robabeh Eslami and Mohammad Khoveyni

**DEA2016: P-181**

**Tolerance Specification of Software Tools for Robust Data  
Envelopment Analysis.**

Choonjoo Lee

**DEA2016: P-206**

**Measuring energy efficiency of wheat production incorporating  
carbon emission output**

Alireza Khoshroo and Ali Emrouznejad

**Wednesday (May 25, 2016)**

**10:30 - 12:00**

**Session 1 (Room: "Xiande A"): DEA Modeling and Algorithm  
Chair: Andreas Dellnitz**

**DEA2016: P-057**

**Utilization of cross efficiency to improve efficiency under fixed input/output resources**

Sanjeet Singh and Surya Majumdar

**DEA2016: P-023**

**Setting handicaps to industrial sectors in DEA illustrated by Ethiopian industry**

Kidanemariam Hailu and Kaoru Tone

**DEA2016: P-065**

**Peer Selection in DEA – Efficiency vs. RTS**

Andreas Dellnitz and Elmar Reucher

**DEA2016: P-127**

**Solving multi-objective 0-1 linear programming by using data envelopment analysis method in the presence of negative data**

Maryam Mohaghegh Tabar, Monireh Jahani Sayyad Noveiri and Nasruddin Hassan

**Wednesday (May 25, 2016)**

**10:30 - 12:00**

**Session 2 (Room: "Xiande B"): Applications of DEA in Banking and Finance  
Chair: Subhash Ray**

**DEA2016: P-149**

**Bank Efficiency of Domestic and Foreign Banks in China**

Joerg Wild and Hind Lebdaoui

**DEA2016: P-157**

**Labor Cost Efficiency of Bank Branches in India**

Subhash Ray, Kankana Mukherjee and Abhiman Das

**DEA2016: P-002**

**How healthful was the expansion of the Private Medical Expenses Insurance in Mexico**

Ana Maria Reyna, Hugo Fuentes and Emili Grifell-Tatjé

**DEA2016: P-076**

**A Scale-Efficiency Matrix and Application on Evaluating Big and Strong Enterprises**

Nan Zhu, Yun Zhang, Wei Wei, Dan Yang and Ali Emrouznejad

**Wednesday (May 25, 2016)**

**10:30 - 12:00**

**Session 3 (Room: "Boxue A"): Applications of DEA in Energy / Electricity /Water Industry**

**Chair: Rajiv Banker**

**DEA2016: P-050**

**Empirical Research on the Effect of Industrial Structure on Energy Efficiency in 21 districts of Sichuan Province**

Ming-Xiang Lu, He-Ming Xie and Xue-Qing Qi

**DEA2016: P-107**

**Electricity Efficiency Change in China and its Economic Explanation**

Zhen Xie

**DEA2016: P-162**

**Energy Efficiency and Capacity Utilization in Indian Manufacturing: A Tale of Two Industries**

Kankana Mukherjee

**DEA2016: P-203**

**Improvement in Efficiency Under DEA-based Incentive Regulation of Electric Utilities in Brazil**

Rajiv Banker and David Zhang



**Wednesday (May 25, 2016)**

**10:30 - 12:00**

**Session 4 (Room: "Boxue B"): Applications of DEA in Manufacturing**

**Chair: Sanjeet Singh**

**DEA2016: P-196**

**The low-carbon technology characteristics of China's ferrous metal industry**

Ning Zhang, Yanni Yu and Zhongfei Chen

**DEA2016: P-009**

**The Determinants of Efficiency in Manufacturing Industries in Lao PDR**

Bounmy Inthakesone and Sisomphet Khanopheth

**DEA2016: P-082**

**Load Balancing and Resource Allocation Management with Data Envelopment Analysis Methods in Cloud Computing Environment**

Mehdi Effatparvar, Farzad Rejanejad and Somayeh Aghayi

**DEA2016: P-110**

**Performance Efficiency of Sustainable Practices in French Wine Regions Using Data Envelopment Analysis**

Samah Jradi, Tatiana Bouzdine Chameeva, Anicia Jeagler and John Haddad

**Thursday (May 26, 2016)**

**09:00 - 10:30**

**Session 1 (Room: "Xiande A"): DEA Modeling and Algorithm**

**Chair: Dimitris Despotis**

**DEA2016: P-165**

**Productivity and New Investment in Information Technology**

Soonchul Hyun and Mark Anderson

**DEA2016: P-060**

**Creating Competitive Advantages in Parcel Delivery Service using Data Envelopment Analysis (DEA)**

Amma Leung and Ping Ji

**DEA2016: P-053**

**Benchmark Forecasting in Data Envelopment Analysis for Decision Making Units**

Morteza Shafiee and Farhad Hosseinzadeh Lotfi

**DEA2016: P-036**

**The "weak link" approach to network DEA: The case of two-stage processes**

Dimitris Despotis, Gregory Koronakos and Dimitris Sotiros

**Thursday (May 26, 2016)**

**09:00 - 10:30**

**Session 2 (Room: "Xiande B"): Applications of DEA in Banking and Finance**

**Chair: Abhiman Das**

**DEA2016: P-169**

**Nonparametric Estimation of Bank Production and Efficiency in the Presence of Noise**

Abhiman Das, Ole Bent Olesen and John Ruggiero

**DEA2016: P-005**

**Social and Technical Efficiency of Savings Groups in Ethiopia and Tanzania**

Nyankomo Marwa and Komlan Sedzro

**DEA2016: P-085**

**The Efficiency of Cooperative Financial Institutions in South Africa: An Empirical study using DEA Approach**

Master Mushonga, Nyankomo Marwa and Thankom Arun

**DEA2016: P-180**

**The evaluation of cross efficiency of DEA two-stage process in the presence of undesirable outputs**

Javad Gerami

**Thursday (May 26, 2016)**

**09:00 - 10:30**

**Session 3 (Room: "Boxue A"): Applications of DEA in Agriculture**

**Chair: Wirat Krasachat**

**DEA2016: P-177**

**Technical and cost efficiency of Thai sugarcane farmers**

Thanaporn Athipanyakul

**DEA2016: P-122**

**Technical efficiency of chili farms in Thailand under Good Agricultural Practice System**

Wirat Krasachat

**DEA2016: P-198**

**Efficiency Among the Sugarcane Farmers of Bhiradichiwadi: A Case Study Using DEA**

Rajani Mathur and Swati Raju

**Thursday (May 26, 2016)**

**09:00 - 10:30**

**Session 4 (Room: "Boxue B"): Applications of DEA (Presentation in Chinese)**

**Chair: Zhu Nan**

**DEA2016: P-062**

**What kind of skilled labor does technological progress in China's manufacturing industry bias? Application of the bias-corrected Malmquist indices**

Yu Teng

**DEA2016: P-191**

**The evaluation of cost efficiency in China's urban water supply utilities**

Minzhe Du and Bing Wang

**DEA2016: P-193**

**An Empirical Study on the Efficiency of Urban Water Resource System in China Based on the Analysis of BAM Network DEA Model**

Mingli Gong and Bing Wang

**DEA2016: P-100**

**On Eco-efficiency of Provincial Regions of China: DEA approach**

Zhu Nan, Qiu Hong and Xu Xiaozhou

**Thursday (May 26, 2016)**

**11:00 - 12:30**

**Session 1 (Room: "Xiande A"): DEA Modeling and Algorithm**

**Chair: Andreas Kleine**

**DEA2016: P-117**

**Visualizing DEA efficiency-configurations**

Steffen Hoffmann, Andreas Kleine and Andreas Dellnitz

**DEA2016: P-160**

**Detecting the QRS complex based on DEA and cross-efficiency evaluation**

Xiaoya Li, Changjian Tu, Donghai Huang and Qian Yuan

**DEA2016: P-067**

**From RTS to Cross-RTS**

Andreas Kleine

**DEA2016: P-083**

**A Generalized Revenue Efficiency Measurement with Fuzzy Data**

Nazila Aghayi and Samira Salehpour

**Thursday (May 26, 2016)**

**11:00 - 12:30**

**Session 2 (Room: "Xiande B"): Applications of DEA in Manufacturing**  
**Chair: Lei Chen**

**DEA2016: P-066**

**A Centralized Performance Benchmarking Approach for Maintenance Groups in the Elevator and Escalator Industry**

Sören Harms, Mohsen Afsharian and Heinz Ahn

**DEA2016: P-190**

**Determinants of Technical Efficiency in Kenyan Manufacturing Sector: A Cross-Sectional Analysis**

Kiplangat Josea

**DEA2016: P-163**

**Impact of the Foreign Direct Investment on Chinese Manufacturing Industry – An Empirical Application of Data Envelopment Analysis**

Lei Chen, Subhash Ray and Lisi Shi

**Thursday (May 26, 2016)**

**11:00 - 12:30**

**Session 3 (Room: "Boxue A"): Applications of DEA in Transportation**  
**Chair: Nadia Tahir**

**DEA2016: P-006**

**Empirical Analysis of Railway Efficiency in Pakistan**

Nadia Tahir and Pervez Tahir

**DEA2016: P-090**

**Allocation of personnel and equipment for the Keelung Harbor Terminal - an application of multi-activity centralized data envelopment analysis**

Ming-Miin Yu, Bo Hsiao, Yue-De Lin and Li-Hsueh Chen

**DEA2016: P-104**

**Comparison of operating efficiency of government operated and private airports in India**

Ishita Patel, Hari Shukla and Aneesh Chinubhai

**DEA2016: P-120**

**Application of DEA in Evaluating Relative Efficiency of Iranian Flights  
Generating Income**

Mostafa Kazemi and Amirhossein Bagherieh-Mashhadi

**Thursday (May 26, 2016)**

**11:00 - 12:30**

**Session 4 (Room: "Boxue B"): Applications of DEA  
(Presentation in Chinese)**

**Chair: Qingxian An**

**DEA2016: P-014**

**Dynamic network DEA model for a two-stage system with  
intertemporal shared outputs: an application to Chinese high-  
tech activities**

Qingxian An and Beibei Xiong

**DEA2016: P-047**

**An extension on super slacks-based measure approach**

Ya Chen, Yongjun Li and Liang Liang

**DEA2016: P-046**

**Allocation of emission permits based on DEA and production  
stability**

Huaqing Wu, Dongxu Zhang, Bo Chen and Min Yang

**Thursday (May 26, 2016)**

**14:00 - 15:00**

**Session 1 (Room: "Xiande A"): Other DEA Applications**

**Chair: Mark Anderson**

**DEA2016: P-081**

**Three equitable resource allocation methods using data  
envelopment analysis**

Reza Maddahi

**DEA2016: P-128**

**Evaluating Health Care Efficiency of Turkish Cities by Data Envelopment Analysis**

Erhan Berk

**DEA2016: P-161**

**Top Management Team Compensation, Strategic Positioning, and Firms' Competitive Effectiveness**

Mark Anderson, Yan Ma and Rong Zhao

**Thursday (May 26, 2016)**

**14:00 - 15:00**

**Session 2 (Room: "Xiande B"): Applications of DEA in Education**

**Chair: Victor Podinovski**

**DEA2016: P-164**

**An application of the hybrid returns-to-scale DEA model with production trade-offs to the efficiency assessment of universities**

Victor Podinovski

**DEA2016: P-109**

**What Determines the Efficiency of Public Secondary Schools in Pakistan? A case study of Multan district**

Muhammad Omer Chaudhry and Tahira Batool

**Thursday (May 26, 2016)**

**14:00 - 15:00**

**Session 3 (Room: "Boxue A"): Applications of DEA in Energy / Electricity /Water Industry**

**Chair: Bai-Chen Xie**

**DEA2016: P-016**

**Star Structure in Network Data Envelopment Analysis**

Hadi Bagherzadeh Valami and Naser Amani

**DEA2016: P-071**

**Productivity Assessment of Petrochemical Industry in Taiwan  
Using Data Envelopment Analysis and Balanced Scorecard  
Approach**

Shinn Sun and Chih-Wei Feng

**DEA2016: P-059**

**Measuring the Efficiencies of China's Grid Companies: A  
Bootstrapped Meta-Frontier Approach**

Bai-Chen Xie, Yun-Fei Chen and Michael Pollitt

**Thursday (May 26, 2016)**

**14:00 - 15:00**

**Session 4 (Room: "Boxue B"): Applications of DEA  
(Presentation in Chinese)**

**Chair: Zehua Ling**

**DEA2016: P-093**

**A Comparative Analysis of Technical Efficiency between Chinese  
and Indian Commercial Banks: SFA Approach**

Huajie Zhang and Nan Zhu

**DEA2016: P-192**

**How Serious Overcapacity is in China: Based on a comparative  
analysis of the static and dynamic methods**

Shaohua Zhang and Weijie Jiang

**DEA2016: P-200**

**On Productive Efficiency and Total Factor Productivity Change of  
City Commercial Banks of China**

Zehua Ling and Nan Zhu