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# Analysis of the coupling coordination of livestock production, residential consumption, and resource and environmental carrying capacity in China

Kun Zhou<sup>1</sup>, Jin Wu<sup>2†</sup>, Hongyao Li<sup>3†</sup>, Zhenwang Zhang<sup>1</sup>,  
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Increasing demands for livestock products have stimulated rapid increases in the number of livestock and the scale of farming, thus increasing pressure on resources and the environment. Coordinating the development of livestock production (LP) with residential consumption (RC), resources and the environmental carrying capacity (RECC) is important to ensure sustainable development. In this study, the entropy weight method and the improved-coupling coordination degree (CCD) model were used to identify the spatial-temporal coordination development characteristics of livestock production-residential consumption-resource and environmental carrying capacity (LRRE). Furthermore, the spatial autocorrelation model (SAM) and gray model (GM) were used to analyze the spatial aggregation characteristics and future development trends of the CCDs of the LRRE in China. The findings show that the CCDs of the LRRE values in 31 Chinese provinces increased from 2005 to 2020, but no provinces reached a high coordination level. Specifically, the coordinated development level of LRRE is relatively high in the central, eastern and northeastern regions and relatively low in the western region. The spatial autocorrelation analysis confirmed that the high-high (H-H) aggregation areas were mainly distributed in the northeastern, eastern, and central regions, while low-high (L-H) agglomeration was distributed in the western region. This phenomenon is mainly attributed to the continuous expansion of the scale of livestock production in western China. Regions with relatively developed economies have more funds to invest in environmental protection projects. Using GM method, we find that the CCDs of LRRE in 31 provinces in China will increase from 2021 to 2030, and all provinces will reach the basic coordination level. However, most of the western regions will barely reach the basic coordination level. This result indicates that the low level of LRRE development in western China may be difficult to change in the short term. The level of coordinated LRRE development in the relatively developed eastern region is increasing. The spatial layout of China's livestock industry should be appropriately adjusted, its expansion rate in the western region should be decreased, and the ecological environment of the areas bordering the western and central regions should be improved. These findings have practical implications for other large livestock production countries. Promoting the coordinated development of LRRE is also

# Coupling Research And Production

**Marvin J. Cetron, Joel D. Goldhar**



## **Coupling Research And Production:**

**Coupling Research and Production** ,1967 The Problem of Coupling Research and Production George Martin,American Institute of Mining, Metallurgical, and Petroleum Engineers,1967 **Coupling research and production : proceedings of a Symposium on the Problem of Couplings Research and Production** ,1967 Coupling Research and Production American Institute of Mining, Metallurgical, and Petroleum Engineers,1967 **Coupling of Research and Production** Andrew Martin,1967-01-01 **Coupling Research and Production** American Institute of Mining, Metallurgical, and Petroleum Engineers,1967 **Proceedings of a Symposium on the Problem of Coupling Research and Production** Symposium on the Problem of Coupling Research and Production. 1966, Los Angeles, Calif.,American Institute of Mining, Metallurgical, and Petroleum Engineers,1967 **The Globalization of Regional Clusters** Dirk Fornahl,Nils Grashof,2021-04-30 Addressing the role of regional clusters in the context of ongoing globalization this timely book investigates the two seemingly competing trends of globalization and localization from both quantitative and qualitative perspectives International case studies offer pioneering insights into the internationalization process of regional clusters and the effect of this on regional as well as firm performance *Moving Integrated Product Development to Service Clouds in the Global Economy* J. Stjepandić,2014-09-23 The theory of concurrent engineering is based on the concept that the different phases of a product lifecycle should be conducted concurrently and initiated as early as possible within the product creation process Concurrent engineering is important in many industries including automotive aerospace shipbuilding consumer goods and environmental engineering as well as in the development of new services and service support This book presents the proceedings of the 21st ISPE Inc International Conference on Concurrent Engineering held at Beijing Jiaotong University China in September 2014 It is the first volume of a new book series Advances in Transdisciplinary Engineering The title of the CE2014 conference is Moving Integrated Product Development to Service Clouds in the Global Economy which reflects the variety of processes and methods which influence modern product creation After an initial first section presenting the keynote papers the remainder of the book is divided into 11 further sections with peer reviewed papers product lifecycle management PLM knowledge based engineering KBE cloud approaches 3 D printing applications design methods educational methods and achievements simulation of complex systems systems engineering services as innovation and science sustainability and recent research on open innovation in concurrent engineering The book will be of interest to CE researchers practitioners from industry and public bodies and educators alike **Nuclear Science Abstracts** ,1975-03

**Innovation and Institutions** Steven Casper,Frans van Waarden,2005-01-01 The idea behind this book is that institutions are important when it comes to explaining the specialisation and performance of national innovation systems The idea is not new But largely the institution concept has remained somewhat vague and unspecified in the literature This book is valuable since it succeeds in opening up the black box of institutions and organisations The distinction between institutions

at different levels and how they link up and form a systemic whole is especially original and fruitful The interdisciplinary team behind the book has also produced a welcome antidote to the current tendency to benchmark innovation systems exclusively on the basis of quantitative indicators The analysis demonstrates that some national systems do better in some specific areas because of being supported by institutions that are sometimes deeply rooted in history and culture This is why imitating best practice across countries is not a straight forward thing to do Bengt ke Lundvall Aalborg University Denmark Innovation and Institutions is an extensive elaboration on the make up of systems of innovation It examines why some countries are more innovative than others why national styles of innovation differ and goes on to explore why some countries make radical innovations but fail to successfully market them whilst others making incremental innovations have more commercial success The book draws on a variety of different literatures and perspectives to illustrate the organizational and institutional dimensions of national innovation systems Literatures discussed include the economics of innovation organizational sociology administrative science institutional economics organizational learning network analysis business systems economic governance and regulation This truly interdisciplinary book will be invaluable to academics and researchers focussing on innovation in a wide range of fields It will also strongly appeal to practitioners and policymakers concerned with innovation

**Calculative Techniques for Transonic Flows about Certain Classes of Airfoils and Slender Bodies** John R. Spreiter,1971 *Novel Ways and Methodologies to Improve Crop Yield* Oorbessy Gaju ,Miroslav Zoric,2024-11-01 The global population is increasing at a much faster pace than an increase in the genetic gain for food production by plant breeding Therefore we must find ways or methods to improve our food production if we are to ensure food security for all This special edition is about the novel ways or methodologies that crop or plant scientists are working on to improve crop yield This could fall under the physiological biochemical molecular or even any novel technological approaches such as phenotyping to rapidly select or find traits that are vital for the improvement of current germplasm to make them resilient to an ever changing environment Crop yield especially grain yield is a very complex trait to deconvolute and understand as it is influenced by so many factors With the recent unprecedented weather events where plants are subjected to extreme temperatures low and high it is imperative to find ways quickly to screen for varieties that can withstand these changes Novel ways or methods in the various disciplines physiology molecular phenotyping biochemical that can help to identify rapidly the traits related to yield in crops that can lead to an increase in productivity will be informative and help the scientific community to be up to date with recent progress **Army RD & A. ,1968**

**Army Research and Development ,1968** **Computational Science and Its Applications - ICCSA 2023 Workshops** Osvaldo Gervasi,Beniamino Murgante,Ana Maria A. C. Rocha,Chiara Garau,Francesco Scorza,Yeliz Karaca,Carmelo M. Torre,2023-06-28 This nine volume set LNCS 14104 14112 constitutes the refereed workshop proceedings of the 23rd International Conference on Computational Science and Its Applications ICCSA 2023 held at Athens Greece during July 3 6

2023 The 350 full papers and 29 short papers and 2 PHD showcase papers included in this volume were carefully reviewed and selected from a total of 876 submissions These nine volumes includes the proceedings of the following workshops  
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*Computer Science for Environmental Engineering and EcoInformatics* Yuanxu Yu,Zhengtao Yu,Jingying Zhao,2011-07-18  
 This two volume set CCIS 158 and CCIS 159 constitutes the refereed proceedings of the International Workshop on Computer Science for Environmental Engineering and EcoInformatics CSEEE 2011 held in Kunming China in July 2011 The 150 revised full papers presented in both volumes were carefully reviewed and selected from a large number of submissions The papers are organized in topical sections on computational intelligence computer simulation computing practices and applications ecoinformatics image processing information retrieval pattern recognition wireless communication and mobile computing artificial intelligence and pattern classification computer networks and Web computer software data handling and applications data communications data mining data processing and simulation information systems knowledge data engineering multimedia applications **The Science of Managing Organized Technology** Marvin J. Cetron,Joel D. Goldhar,1970 [Advances in Natural Gas Technology](#) Hamid Al-Megren,2012-04-11 Natural gas is a vital component of the world s supply of energy and an important source of many bulk chemicals and speciality chemicals It is one of the cleanest safest and most useful of all energy sources and helps to meet the world s rising demand for cleaner energy into the future However exploring producing and bringing gas to the user or converting gas into desired chemicals is a systematical engineering project and every step requires thorough understanding of gas and the surrounding environment Any advances in the process link could make a step change in gas industry There have been increasing efforts in gas industry in recent years With state of the art contributions by leading experts in the field this book addressed the technology advances in natural gas industry

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ceramic material is an inorganic metallic oxide nitride or carbide material some elements such as carbon or silicon may be considered ceramics ceramic materials are brittle hard strong in compression and weak in shearing and tension they withstand the chemical erosion that occurs in other materials subjected to acidic or caustic environments ceramics generally can withstand very high temperatures ranging from 1 000 c to 1 600 c 1 800 f to 3 000 f

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