**Urban complexity in light of the urban reality of China**

The aim of this special issue is to explore and compare such similarities and differences between Chinese cities and urban systems and cities and systems of cities of other cultures in all aspects of complexity theories of cities. We will welcome submissions on topics that include (but are not limited to): irreducibility, nonlinearity, fractality, adaptability, emergence, hierarchy, interaction, scaling invariance, critical phase transition, self-organized criticality (SOC), edge of chaos.

**Guest editors:**

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**Prof. Juval Portugali**  
Tel Aviv University  
  
  
**Prof. Yanguang Chen**  
Peking University

**Special issue information:**

“*I think the next century will be the century of complexity.*”Stephen Hawking (2000).

The notion ‘complexity’ refers to a set of theories that emerged in the 1970s and are now forming complexity theory (or science): Theories about open systems that exchange matter, energy and information with their environment and are typified by phenomena of emergence, non-linearity, self-organization, steady state, chaos, phase transition, fractal structure, power-law distribution and more. Cities were from the start associated with complexity theory, first, as a metaphor to convey the notion of complexity (e.g. by Prigogine 1977), and soon after as a leading domain of urban research termed ‘*complexity theories of cities*’ (CTC).

The 21st century has also been termed The Age of Cities, due to the observation that world society is in the midst of a fast and intensive process of urbanization with the implication that for the first time in human history more than half of world society is living in cities and the process is advancing fast. The conjunction between the above two trends has led, firstly, to the notion of the *21st century as the age of cities and complexity* (Portugali 2023) – a conjunction that was strengthen by the above noted association between complexity and cities. Secondly, it has led to the impression that world societies with their complex urban systems are becoming also more uniform, erasing and canceling the historical differences between cultures, societies and countries, so that people all over the world are experiencing the same global urban reality.

This special issue commences from the view that historical cultural differences still play a role. We base this view of us one some preliminary studies demonstrating that there are similarities and significant differences between the spatial complexity of Chinese cities and that of European and American cities. For example, both the urbanization curves and fractal dimension curves of Chinese cities and European and American cities can be modeled by sigmoid function. However, the urbanization curves and fractal dimension curves of European and American cities can be modeled by common logistic function, while the urbanization curves and fractal dimension curves of Chinese cities can be modeled by quadratic logistic function. Different types of logistic functions correspond to different types of logistic maps, which leads to different spatial dynamics (oscillation and chaos). So, the mathematical models used to predict the growth of Chinese cities are different to some extent from those applicable to European and American cities. The scientific principles of managing Chinese cities are also different to a degree from those of managing European and American cities. Another example is the rank-size distribution of cities: European and American cities generally follow pure Zipf's law, with a scaling exponent close to 1. The size distribution of Chinese cities also obeys Zipf's power law in a sense, but urbanization dynamics lead to a deviation of the scaling exponent from 1.

**Manuscript submission information:**

We invite colleagues to submit the manuscript any time before the deadline. For any inquiries about the appropriateness of contribution topics, please contact Prof. Juval Portugali at [juval@tauex.tau.ac.il](mailto:juval@tauex.tau.ac.il)

The journal's submission platform ([Editorial Manager®](https://www.editorialmanager.com/jum/default2.aspx)) will be available for receiving submissions to this Special Issue for the invited articles. Please refer to the Guide for Authors to prepare the manuscript and select the article type “VSI: Urban complexity" when submitting your manuscript online. Both the Guide for Authors and the submission portal can be found on the journal Homepage here: <https://www.elsevier.com/journals/journal-of-urban-management/2226-5856/guide-for-authors>

**Manuscript submission deadline: May 31, 2024**

All submissions deemed suitable to be sent for peer review will be reviewed by at least two independent reviewers. Once your manuscript is accepted, it will go into production, and will be simultaneously published in the current regular issue and pulled into the online Special Issue. Articles from this Special Issue will appear in different regular issues of the journal, though they will be clearly marked and branded as Special Issue articles.

Here is an example: <https://www.sciencedirect.com/journal/science-of-the-total-environment/special-issue/10SWS2W7VVV>

**What is a VSI (Virtual Special Issue):**  
Upon its editorial acceptance, articles submitted to a VSI will go into production immediately. It will be published in the latest regular issue while simultaneously being presented on the Special Issue webpage. The regular issues will mark and brand the Special Issue articles.

**References:**

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**Keywords:**

Complexity theory. Self-organization. Age of Cities. Cultural differences, urban scaling

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