



Proceedings of the Eleventh International Symposium on Structural Engineering

Edited By
Jie Cui, Feng Xing, Ji-Ping Ru and Jin-Guang Teng

Volume II

PROCEEDINGS OF THE ELEVENTH INTERNATIONAL SYMPOSIUM ON STRUCTURAL ENGINEERING

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**Jie Cui, Feng Xing,
Ji-Ping Ru and Jin-Guang Teng**



Science Press

Responsible Editor: Jia-Lin Ren An-Qi Tong Yao Lu Jin-Feng Tian

**PROCEEDINGS OF THE ELEVENTH
INTERNATIONAL SYMPOSIUM ON
STRUCTURAL ENGINEERING**

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Published by Science Press

16 Donghuangchenggen North Street

Beijing 100717, China

Printed in Beijing

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ISBN 978-7-03-029530-9/TU • 878

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Preface

In today's world, structural engineering has become an increasingly important issue due to safety, economic and environmental incentives. To provide an international forum for young experts from the research and practicing engineering communities, who work worldwide in a broad area of structural engineering and construction, and for those who concern with the promotion and exchange of information on structural engineering, the previous ten International Symposiums on Structural Engineering were successfully held in Leshan, Harbin, Shanghai, Beijing, Shenyang, Kunming, Tianjin, Xi'an, Fuzhou, and Changsha between 1990 and 2008. Due to developments over the two decades, this series of structural engineering symposiums possess distinct characteristics and features, which continue to attract many young and middle aged elite academics from among Chinese people. In view of this, the title of this symposium has been changed to "The International Symposium on Structural Engineering (ISSE)".

As an on-going series, the objective of the eleventh symposium (ISSE 11th), which is organized by Guangzhou University, Shenzhen University and the Hong Kong Polytechnic University, sponsored by National Natural Science Foundation of China(NSFC) and supported by many related international and national organizations, is aimed at presenting and publishing the most recent researches and developments in structural analysis, design, construction, maintenance and disaster mitigation, and also discussing the implementation and development of new tools and technologies for professional application to safe and sustainable infrastructure. ISSE 11th will be held in Guangzhou on December 18-20, 2010, with a view to further promoting international collaboration, cooperation, and mutual understanding.

530 papers had been submitted to the symposium, and 374 full papers from more than 20 countries were accepted for publication in the proceedings of ISSE 11th. The contributions of all the authors to the proceedings are really appreciated.

We would like to express our sincerely thanks to all the members of the International Scientific Committee as well as the Local Organizing Committee, whose dedication is considered to be the key for the success of this symposium. Moreover, the supports from all the organizations listed in the proceedings and the special contributions from all the keynote speakers and the invited guests are also gratefully appreciated. We really hope that all the participants will have a good time and enjoy their stay in Guangzhou.

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October 12,2010

**Reliability, Durability
Maintenance, Management,
Life-Cycle Cost Analysis**

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