



Edited by  
**E. Batista**  
**P. Vellasco**  
**L. de Lima**

**VOLUME 1**

Proceedings of

**SDSS'Rio 2010**

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**Stability and Ductility of Steel Structures**



# **SDSS'** Rio 2010

International Colloquium

**Stability and Ductility of Steel Structures**

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Federal University of Rio de Janeiro and State University of Rio de Janeiro

Telephone: (+55 21) 2562-8474 and (+55 21) 2334-0469

E-mail: batista@coc.ufrj.br ; pvellasco@globo.com and luciano@eng.uerj.br

Editors: Eduardo de M. Batista, Pedro C. G. da S. Vellasco and Luciano R. O. de Lima



# SDSS'Rio 2010

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**Stability and Ductility of Steel Structures**

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## PREFACE

The Stability and Ductility of Steel Structures, SDSS, is a series of international conferences that followed the original Structural Stability Research Council (SSRC) International Colloquia. This series of conferences started in 1972 and their previous editions took place in several different cities and countries, the last three were held in Timisoara, Romania (1999), in Budapest, Hungary (2002) and in Lisbon, Portugal (2006). The SDSS conferences are intended to summarize the progress in theoretical, numerical and experimental research concerning the analysis and design of steel structures, with particular emphasis addressed to topics related to stability and ductility aspects. Special attention is always paid to new concepts and procedures and also to the background, development and application of rules and recommendations either appearing in recently published Codes and Specifications or about to be included in their upcoming versions.

The present Proceedings of the International Colloquium on Stability and Ductility of Steel Structures SDSS’Rio 2010 contains 130 peer-reviewed selected papers and eight invited keynote lectures presented during the conference in Rio de Janeiro, September 8-10, 2010. The opening chapter is addressed to the keynote lectures while following include all the full papers sorted according to the conference themes sessions.

The editors address their profound acknowledgements to those that supported the innumerable tasks of organization which were developed during the last two years in order to prepare with success the SDSS’Rio 2010. This conference is the result of the enthusiasm and dedication of these individuals. Special thanks are due to the conference sponsors UFRJ, UERJ, COPPE, FAPERJ, CNPq, CAPES and CBCA.

We are indebted to the authors of keynote lectures and selected papers which conferred the high standard of their contributions included in this book as well as the quality of the oral presentations during the conference. Their effort to present their research results were very much appreciated and can be confirmed in the following pages of this book.

The editors gratefully thank the members of the Organizing and the Scientific Committees that supported the extensive work of reviewing the submitted papers. SDSS’Rio 2010 scientific standard is the result of this highly qualified work.

Finally, one last word of appreciation for the support provided by the staff of the Civil Engineering Program of COPPE-UFRJ, the visual design professionals from COPPE that developed the visual program of the conference and the professionals from COPPE that supported the computational facilities that enabled the organization of the conference.

Rio de Janeiro, September 2010  
Eduardo Batista  
Pedro Vellasco  
Luciano de Lima



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