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Structural Behavior of Spot Welded Joints: Theoretical, Numerical and Experimental Analyzes

Guest Editors:

Prof. Dr. Pierluigi Fanelli

Department of Economics,
Engineering, Society and
Business Organization, University
of Tuscia, Largo dell'Università,
Viterbo, Italy

Prof. Dr. Francesco Vivio

Department of Enterprise
Engineering, University of Rome
Tor Vergata, I00133 Rome, Italy

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Message from the Guest Editors

The interest on structures jointed by spot welds is strong especially in automotive and railways applications, where structures may contain several thousands of spot welds. These spot welds are subjected to complex multiaxial loads both under service or crash conditions. The stress field close to the spot region is quite complex, mostly due to geometrical irregularities and several local effects at the edge of the spot weld. Moreover, structural behaviour and local stiffness evaluation of spot welds show some complexity, due to the difficulties in accurate modelling, using finite element models, the region close to each spot weld, featuring local high stress/strain, associated with very high stress/strain gradients. Furthermore, it is necessary to use models that involve only a few degrees of freedom, since real structures usually contain several spot welds: modelling each of them with accurate and complex FE models would require a major computational effort.



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Editor-in-Chief

Prof. Dr. Maryam Tabrizian

1. Department of Biomedical Engineering, Faculty of Medicine and Health Sciences, McGill University, Montreal, QC H3A 2B6, Canada

2. Faculty of Dentistry and Oral Health Sciences, McGill University, 3640 Rue University, Montreal, QC H3A 0C7, Canada

Message from the Editor-in-Chief

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Contact Us

Materials Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

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