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# CONSTRUCTION AND STEEL STRUCTURE

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# CONCRETE STRUCTURES & CONCRETE TECHNOLOGY

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## Experimental study of demountable shear connectors for composite bridge decks with corrugated steel sheets

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In order to overcome the shortcoming of insufficient shear resistance of traditional concrete bridge decks, a new composite bridge deck formed by corrugated steel sheets and concrete is introduced. Taking the corrugated steel sheets as the baseplate of the concrete, a group of demountable shear connectors with different stud collar size have been push-out-tested based on Eurocode 4 to assess the potential and suitability in terms of replacing welded shear studs for this innovative composite bridge deck design. The ultimate strength and the load-slip characteristics of the demountable shear connectors are investigated. And the properties of those demountable shear connectors such as shear resistance, stiffness, ductility, and failure modes have been compared with the welded shear studs. Finite element (FE) models of push-out test specimens are developed and validated against experimental results, parametric FE analyses are carried out to elucidate the effect of a change in the concrete grades and stud collar sizes on the shear resistance of demountable shear connections of this innovative composite bridge deck.

### Biography

Jing Zhang has completed her PhD at the age of 30 years from the University of Hong Kong. Now she is an associate professor at the Hefei University of Technology. She has published more than 8 papers in reputed journals and has been serving as the reviewer of several journals.

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