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Volume 7, Issue 4, 2018, Pages 132-136

## Wake modifications in confined flows due to the presence of a downstream cylinder in staggered arrangement (Article)

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## Abstract

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In the present study, confined flows around two square cylinders in staggered arrangement were numerically investigated. Cross-flow and streamwise center-to-center spacings of one- and three-cylinder diameters, respectively, were considered. Simulations were carried out at Reynolds numbers  $Re = 50, 100, 150$  and  $180$ , where the resulting wakes are laminar and periodic. Results indicate that the presence of the downstream cylinder tends to reduce the Strouhal number, amplitude and the time-averaged lift coefficient of the upstream cylinder relative to the single cylinder cases. Furthermore, the time variations of upstream cylinder's lift coefficient behave similar to that of a single cylinder. © 2018 Authors.

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## Author keywords

[Drag coefficient](#) [Lift coefficient](#) [Square cylinder](#) [Strouhal number](#) [Vortex shedding](#)

ISSN: 2227524X

Source Type: Journal

Original language: English

DOI: 10.14419/ijet.v7i4.27.22500

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