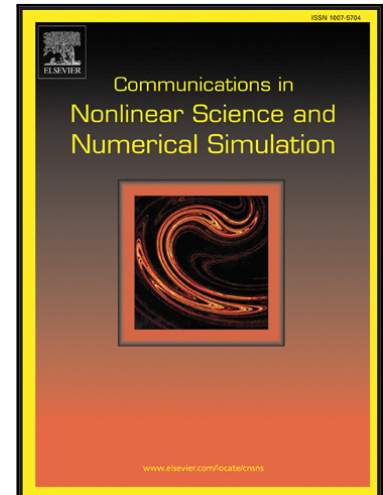


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The effect of gas and fluid flows on nonlinear lateral vibrations of rotating drill strings

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Highlights

- Nonlinear mathematical models describing coupled lateral vibrations of a rotating drill string are developed
- The Galerkin approach and the stiffness switching method are utilized to obtain numerical results
- Correct choice of the gas parameters maintains stability of the system and enables to reduce the amplitude of drill string vibrations

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