

The inviscid limit of steady-states of the Navier-Stokes equations*

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Abstract

We consider the sinusoidally forced Proudman-Johnson equation. Stability of and bifurcation from the trivial solution are studied numerically and analytically. We then compute solutions with large Reynolds numbers. With forces of single, double, and triple mode, there always exists a family of stable solutions, which converges to a constant multiple of $\sin x$. This remarkable universality is also checked in Kolmogorov flows.

References

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