

Accepted Manuscript

Topology optimization of turbulent flows

Cetin B. Dilgen, Sumer B. Dilgen, David R. Fuhrman, Ole Sigmund,
Boyan S. Lazarov



PII: S0045-7825(17)30747-8

DOI: <https://doi.org/10.1016/j.cma.2017.11.029>

Reference: CMA 11688

To appear in: *Comput. Methods Appl. Mech. Engrg.*

Received date: 20 June 2017

Revised date: 25 October 2017

Accepted date: 21 November 2017

Please cite this article as: C.B. Dilgen, S.B. Dilgen, D.R. Fuhrman, O. Sigmund, B.S. Lazarov, Topology optimization of turbulent flows, *Comput. Methods Appl. Mech. Engrg.* (2017), <https://doi.org/10.1016/j.cma.2017.11.029>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

* The paper presents a fast and viable approach for taking into account turbulence in topology optimization of complex flow systems.

* Demonstrates inclusion of turbulence closure models with minimal implementation effort.

* Demonstrates a scalable and computationally cheap procedure for gradient analysis.

* Demonstrates that designs obtained without any simplifying assumptions in the derivation of discrete adjoints outperform those optimized under a frozen turbulence assumption.

ACCEPTED MANUSCRIPT

Download English Version:

<https://daneshyari.com/en/article/6915651>

Download Persian Version:

<https://daneshyari.com/article/6915651>

[Daneshyari.com](https://daneshyari.com)