

检索工具	SCI (科学引文索引)	查证单位	教育部科技查新工作站 Z08
版 本	SCI-Expanded	地 址	西安交通大学图书馆信息咨询部
收录作者	姚磊	查 证 人	朱 君 82667850-54 转 863
署名单位	西北大学	查证日期	2016 年 11 月 18 日

标题: Global classical solutions of the full compressible Navier-Stokes equations with cylindrical or spherical symmetry

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来源出版物: NONLINEAR ANALYSIS-REAL WORLD APPLICATIONS 卷: 33 页: 139-167 DOI: 10.1016/j.nonrwa.2016.06.008 出版年: FEB 2017

摘要: In this paper, we consider the full compressible Navier-Stokes equations in $N(N \geq 2)$ space dimension with cylindrical or spherical symmetric initial data. The global existence of strong and classical solutions is established. The analysis is based on some delicate a priori estimates which depend on the assumption $\kappa(\theta) = \theta(q)$ where $q \geq 0$ and $(\rho(0), \theta(0))$ is an element of H^{-2} , $(u(0), v(0), w(0))$ is an element of $H^{-1}(1)$ boolean AND H^{-2} . Compared with the results in Wen and Zhu (2014) and Qin, Yang, Yao and Zhou (2015), our results relax the restriction $q > 0$, when there is no initial vacuum and include the global existence of classical solutions for both the cylindrical or spherical symmetric cases, respectively. It should point out that we obtain the global classical solutions with the help of weighted H^{-3} estimates of (u, v, w, θ) . (C) 2016 Elsevier Ltd. All rights reserved.

入藏号: WOS:000384858800009

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IDS 号: DY1MJ

ISSN: 1468-1218

来源出版物页码计数: 29