

## 一、个人简介:

苏海燕, 女, 副博导、硕导. 1988 年 3 月出生, 汉族, 中共党员.

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研究领域: 偏微分方程数值解法、计算流体力学

招生专业: 070102-计算数学

招生方向: 流体计算、磁流体计算、界面问题计算、有限元方法



## 二、学习和工作经历:

### 学习经历:

2010. 09-2015. 06 新疆大学, 数学与系统科学学院, 博士  
2006. 09-2010. 07 新疆大学, 数学与系统科学学院, 学士

### 工作经历:

2018. 01-至今 新疆大学, 数学与系统科学学院, 副教授  
2015. 09-2017. 12 新疆大学, 数学与系统科学学院, 讲师  
2022. 02-2023. 01 中国科学院, 数学与系统科学研究院, 访问学者  
2021. 12-2022. 01 清华大学, 数学科学系, 访问学者  
2021. 06-2021. 07 中国科学院, 科学与工程计算国家重点实验室, 访问学者  
2019. 08-2020. 08 美国北卡州立大学, 数学科学学院, 访问学者  
2019. 06-2019. 07 中国科学院, 科学与工程计算国家重点实验室, 访问学者  
2018. 04-2018. 07 北京大学, 数学科学学院, 访问学者  
2016. 07-2016. 08 中国科学院, 科学与工程计算国家重点实验室, 访问学者  
2014. 05-2014. 11 德国柏林洪堡大学, 数学院, 访问学者  
2013. 03-2014. 01 西安交通大学, 数理学院, 交流学习

### 三、主持科研项目情况

- 1、国家自然科学基金-数学天元基金项目，移动界面问题的高阶有限元方法研究(12126361)，2022.1—2022.12，10.00万元，主持人.
- 2、国家自然科学基金-地区科学基金项目，大密度比两相不可压磁流体动力学扩散界面模型及其高效算法研究(12061076)，2021.1—2024.12，34.00万元，主持人.
- 3、新疆维吾尔自治区天山青年项目，高雷诺数不可压缩磁流体动力学方程的自适应算法研究(2017Q079)，2018.8—2021.8，8.00万元，主持人.
- 4、国家自然科学基金青年基金项目，不可压缩磁流体动力学方程的非协调自适应有限元高效算法研究(11701493)，2018.1—2020.12，25.00万元，主持人.
- 5、新疆维吾尔自治区青年科学基金项目，高雷诺数MHD方程对的高效数值算法研究(2016D01C073)，2017.1—2019.12，5.00万元，主持人.
- 6、新疆大学博士启动基金，热传导-对流方程的高效迭代算法研究(BS150207)，2016.1—2018.1，5.00万元，主持人.

### 四、学生情况

#### 在培养博士：

2020级 李仙珠

#### 在培养硕士：

2019级 张珂 徐佳丽

2020级 史凯文 张喆 周翔海

2021级 董世田、杜子俊、张嘉琪、张悦

### 五、获奖情况

- 1、2020年，自治区科技进步奖，一等奖（3/5）.
- 2、2018年，2D/3D不可压缩磁流体动力学方程的两水平加罚牛顿迭代算法，新疆维吾尔自治区自然科学优秀学术论文三等奖(1/3).

3、2016 年，不可压缩热传导-对流方程的若干有限元迭代算法研究，新疆维吾尔自治区“优秀博士学位论文”，独立完成.

## 六、发表文章情况

1、**Haiyan Su**, Guodong Zhang\*: Highly Efficient and Energy Stable Schemes for the 2D/3D Diffuse Interface Model of Two-Phase Magnetohydrodynamics, *Journal of Scientific Computing*, 2022, 90(63).

2、Jiali Xu, Xinlong Feng, **Haiyan Su**\*. Two-level Newton iterative method based on nonconforming finite element discretization or 2D/3D stationary MHD equations. *Computers and Fluids*, 2022.

3、Jiali Xu, **Haiyan Su**\*, Zhilin Li. Optimal convergence of three iterative methods based on nonconforming finite element discretization for 2D/3D MHD equations. *Numerical Algorithms*, 2022.

4、Ke Zhang, **Haiyan Su**\*, Xinlong Feng. Second order unconditional linear energy stable, rotational velocity correction method for unsteady incompressible magnetohydrodynamic equations, *Computers and Fluids*, 2022.

5、Jiangong Pan, **Haiyan Su**\*, Xinlong Feng: Effective velocity-correction projection methods for unsteady incompressible natural convection equations, *International Communications in Heat and Mass Transfer*, 2021,121 104860.

6、**Haiyan Su**, Xinlong Feng, Jianping Zhao\*: Penalty decoupled iterative methods for the stationary natural convection equations with different Rayleigh numbers, *Applied Numerical Mathematics*, 2021, 163 270-291.

7、Jianping Zhao, Rui Chen\*, **Haiyan Su**: An Energy-Stable Finite Element Method for Incompressible Magnetohydrodynamic-Cahn-Hilliard Coupled Model, *Advances in Applied Mathematics and Mechanics*, 2021, 13(4) 761-790.

8、**Haiyan Su**, Xinlong Feng\*, Jianping Zhao: On two-level Oseen penalty iteration methods for the 2D/3D stationary incompressible magnetohydrodynamics, *Journal of Scientific Computing*, 2020, 83 11.

9、Yuan Ping, **Haiyan Su**, Jianping Zhao\*, Xinlong Feng: Parallel two-step finite element algorithm based on fully overlapping domain decomposition for the time-dependent natural convection problem, *International Journal of Numerical Methods for Heat & Fluid Flow*, 2019, 30 496-514.

10、Yuan Ping, **Haiyan Su**\*, Xinlong Feng: Parallel two-step finite element algorithm for the stationary incompressible magnetohydrodynamic equations, *International Journal of Numerical Methods for Heat & Fluid Flow*, 2019, 29(8) 2709-2727.

- 11、 Lulu Li, **Haiyan Su**, Jianping Zhao, Xinlong Feng\*: Recovery-based error estimator for the natural-convection problem based on penalized finite element method, *International Journal of Numerical Methods for Heat and Fluid Flow*, 2019, 30.
- 12、 **Haiyan Su**, Shipeng Mao, Xinlong Feng\*: Optimal error estimates of penalty based iterative methods for steady incompressible magnetohydrodynamics equations with different viscosities, *Journal of Scientific Computing*, 2019, 79 1078-1110.
- 13、 Guoliang Zhang, **Haiyan Su**, Xinlong Feng\*: A novel parallel two-step algorithm based on finite element discretization for the incompressible flow problem, *Numerical Heat Transfer, Part B: Fundamentals*, 2018, 73(5) 329-341.
- 14、 Ning Li, **Haiyan Su**, Dongwei Gui, Xinlong Feng\*: Multiquadric RBF-FD method for the convection-dominated diffusion problems base on Shishkin nodes, Multiquadric RBF-FD method for the convection-dominated diffusion problems base on Shishkin nodes, *International Journal of Heat and Mass Transfer*, 2018, 118 734-745.
- 15、 Yanqing Wang, **Haiyan Su**, Xinlong Feng\*: Streamline diffusion finite element method for stationary incompressible natural convection problem, *Numerical Heat Transfer, Part B: Fundamentals*, 2018, 74(2) 519-537.
- 16、 Qing Zhang, **Haiyan Su**\*, Xinlong Feng: A partitioned finite element scheme based on Gauge-Uzawa method for time-dependent MHD equations, *Numerical Algorithms*, 2018, 78(1) 277-295.
- 17、 **Haiyan Su**\*, Xinlong Feng, Jianping Zhao: Two-level penalty Newton iterative method for the 2D/3D stationary incompressible magnetohydrodynamics equations, *Journal of Scientific Computing*, 2017, 70(3) 1144-1179.
- 18、 Jiangong Pan, Rui Zhang, Fan Yang, **Haiyan Su**\*: Two-level stabilized nonconforming finite element algorithms for the conduction-convection equations, *Numerical Heat Transfer Part B-Fundamental*, 2017, 72(2) 152-169.
- 19、 Tielie Zhu, **Haiyan Su**, Xinlong Feng\*: Some Uzawa-type finite element iterative methods for the steady incompressible magnetohydrodynamic equations, *Applied Mathematics and Computation*, 2017, 302(1) 34-47.
- 20、 **Haiyan Su**\*, Xinlong Feng, Yinnian He: Second order fully discrete defect-correction scheme for nonstationary conduction-convection problem at high Reynolds number, *Numerical Methods for Partial Differential Equations*, 2017, 33(3) 681-703.
- 21、 **Haiyan Su**\*, Xinlong Feng, Yinnian He: Defect-correction finite element method based on Crank-Nicolson extrapolation scheme for the transient conduction-convection problem with high Reynolds number, *International Communications in Heat and Mass Transfer*, 2017, 81 229-249.

- 22、 **Haiyan Su\***, Xinlong Feng, Pengzhan Huang: Iterative methods in penalty finite element discretization for the steady MHD equations. *Computer Methods in Applied Mechanics and Engineering*, 2016, 304 521-545.
- 23、 Lina Song, **Haiyan Su**, Xinlong Feng\*: Recovery-based error estimator for stabilized finite element method for the stationary Navier-stokes problem, *SIAM Journal on Scientific Computing*, 2016, 38(6) A3758-A3772.
- 24、 Binbin Du, **Haiyan Su**, Xinlong Feng\*: Two-level variational multiscale method based on the decoupling approach for the natural convection problem, *International Communications in Heat and Mass Transfer*, 2015, 61 128-139.
- 25、 **Haiyan Su**, Lingzhi Qian, Dongwei Gui, Xinlong Feng\*: Second order fully discrete and divergence free conserving scheme for time-dependent conduction-convection equations, *International Communications in Heat and Mass Transfer*, 2014, 59 120-129.
- 26、 **Haiyan Su**, Jianping Zhao, Dongwei Gui, Xinlong Feng: Two-level defect-correction Oseen iterative stabilized finite element method for the stationary conduction-convection equations, *International Communications in Heat and Mass Transfer: A Rapid Communications Journal*, 2014, 56, 133-145.
- 27、 **Haiyan Su**, Pengzhan Huang, Juan Wen, Xinlong Feng: Three Iterative Finite Element Methods for the Stationary Smagorinsky Model, *East Asian Journal on Applied Mathematics*, 2014, 4(2) 132-151.
- 28、 **Haiyan Su**, Dongwei Gui, Pengzhang Huang, Xinlong Feng: Two-Level Stabilized, Nonconforming Finite-Element Algorithms for the Stationary Conduction-Convection Equations, *Numerical Heat Transfer Part B Fundamentals*, 2014, 66(3) 211-242.
- 29、 **Haiyan Su**, Pengzhang Huang, Xinlong Feng: Two-level stabilized nonconforming finite element method for the Stokes equations, *Applications of Mathematics*, 2013, 58(6) 643-656.