




# DOHYUN KIM

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## RESEARCH INTEREST

Finite Element Methods, Polygonal Finite Element Methods, Nonconforming Methods, Fluid Dynamics, Scientific Computing



## EDUCATION

**PH.D. Computational Science and Engineering – Mathematics | Yonsei University, South Korea**  
2015 MAR – 2021 FEB

**B.SC. Mathematics | Hanyang University, South Korea**  
2011 MAR – 2015 FEB



## PUBLICATIONS

**Morley finite element methods for the stationary quasi-geostrophic equation | Computer Methods in Applied Mechanics and Engineering, 375, 113639 (2021)**  
Dohyun Kim, Amiya K. Pani, Eun-Jae Park

**Staggered DG methods for the pseudostress-velocity formulation of the Stokes equations on general meshes | SIAM Journal on Scientific Computing, 42, pp. A2537-A2560 (2020)**  
Dohyun Kim, Lina Zhao, Eun-Jae Park

**Error estimates of B-spline based finite-element methods for the stationary quasi-geostrophic equations of the ocean | Computer Methods in Applied Mechanics and Engineering, 335, pp. 255-272 (2018)**  
Dohyun Kim, Tae-Yeon Kim, Eun-Jae Park, Dong-wook Shin



## INTERNATIONAL CONFERENCES

**(Oral) Staggered discontinuous Galerkin methods for the Stokes equations on general polygonal meshes | The 26<sup>th</sup> International Domain Decomposition Conference**  
December 7-12, 2020, Hong Kong, China (Online)

**(Oral) Error estimates of B-spline based finite-element methods for the stationary quasi-geostrophic equations of the ocean | The Week of Applied Mathematics and Mathematical Modelling**

October 7-11, 2019, Vladivostok, Russia

**(Oral) A C0-discontinuous Galerkin method for quasi-geostrophic equations | International Conference on Computational Mathematics – Advances in Computational PDEs**

September 29-October 2, 2018, Seoul, South Korea

**(Proceeding) Polygonal staggered discontinuous Galerkin methods | Oberwolfach Report No. 3, pp. 25-27**

Eun-Jae Park, Lina Zhao, Dohyun Kim

January 10-16, 2021, Oberwolfach, Germany



## **DOMESTIC CONFERENCES**

**(Chair) Special Session: Numerical Modeling and Computation | 2020 KMS Annual Meeting**

July 03, 2020, Seoul, South Korea

**(Oral) High-order staggered discontinuous Galerkin methods for the Stokes problem | High-order Methods & Its Applications**

December 20, 2019, Seoul, South Korea

**(Poster) A C0-interior penalty methods for the quasi-geostrophic equations: A posteriori error analysis | KSIAM 2019 Annual Meeting**

November 8-10, 2019, Yeosu, South Korea

**(Chair) Special Session: Numerical Modeling and Computation | 2019 KMS Annual Meeting**

October 25-27, 2019, Seoul, South Korea

**(Oral) Error estimates of B-spline based finite element methods for the stationary quasi-geostrophic equations of the ocean | 2019 KMS Annual Meeting**

October 25-27, 2019, Seoul, South Korea

**(Oral) C0-interior penalty methods for stationary quasi-geostrophic equations | KSIAM 2018 Annual Meeting**

November 2-4, 2018, Busan, South Korea

**(Oral) Finite element methods for wind-driven large scale ocean circulation with spline basis | 2017 KSIAM Annual Meeting**

November 3-5, 2017, Busan, South Korea

**(Poster) B-spline based finite element method for a Large scale ocean circulation | KSIAM 2017 Spring Conference Joint with EASIAM**

June 23-24, 2017, Seoul, South Korea

**(Oral) Discontinuous Galerkin methods for Hodgkin-Huxley model | 2017 KMS Spring Meeting**

April 28-30, 2017, Gwangju, South Korea



## **AWARDS**

**Merit Academic Paper Award | Yonsei University 2019**

**Graduate School of YONSEI University Research Scholarship grants in 2019 | Yonsei University 2019**

**KSIAM-MathWorks Problem Challenge-Award of Excellence | KSIAM-Mathworks 2018**

**Poster Excellence Award | KSIAM 2017**



## **COMPUTER SKILLS**

- MATLAB
- Python
- C++



## **LANGUAGE**

- Advanced level in English
- Native proficiency in Korean