

## PERSONAL INFORMATION

Family name, First name: Kane, Birane

## KEY QUALIFICATIONS

Research scientist with background in applied Mathematics for engineering. Knowledge of various components, Numerical methods for partial differential equations and Stochastic Differential Equations; Scientific software development; High performance computing; Adaptive mesh refinement; Computational Fluid Dynamics; Reservoir Simulation.

## EDUCATION

- 2018 **PhD** Faculty of Mathematics, University of Stuttgart, Germany
- 2013 **Master** Faculty of Mathematics, Université Pierre et Marie Curie, France

## CURRENT AND PREVIOUS POSITIONS

- 2018 – Present **Postdoc**  
NORCE (Norwegian Research Centre AS), Bergen, Norway
- 2014 – 2018 **Research Scientist & Software Developer**  
Simtech Cluster of Excellence, Stuttgart, Germany

## ORGANIZATION OF SCIENTIFIC MEETINGS

- 2020 Finite Volumes for Complex Applications IX – 2020 Norway
- 2019 Inspire Summerschool – 2019 Norway

## MEMBERSHIP OF SCIENTIFIC SOCIETIES

Member of the International Society for Porous Media (InterPore)

## TRACK RECORD

1. Selected publications [1, 2, 3, 4, 5] in peer journals and peer reviewed conference proceedings.
2. Invited presentations to peer-reviewed, internationally established conferences
  - International Conference on Computational Methods in Water Resources (CMWR 2014), Stuttgart, Germany
  - Gordon Research Conference on Flow and Transport in Permeable Media (July 31 - August 5, 2016 ), Girona, Spain
  - PDE Software Frameworks (PDESoft 2016) Warwick, UK
  - European Conference on Numerical Mathematics and Advanced Applications (ENUMATH 2017), Voss, Norway
  - PDE Software Frameworks (PDESOFT 2018), Bergen, Norway
  - International Conference on Simulation Technology (SimTech 2018) Stuttgart, Germany
  - IOR NORWAY 2019, Stavanger, Norway

- 11<sup>th</sup> annual meeting of the International Society for Porous Media (Interpore 2019), Valencia, Spain
- International Congress on Industrial and Applied Mathematics (ICIAM 2019), Valencia, Spain
- European Conference on Numerical Mathematics and Advanced Applications (ENUMATH 2019), 30th Sep - 4th Oct 2019, Egmond aan Zee, The Netherlands

### 3. Organization of international conferences

- Member of the organization committee of the Finite Volumes for Complex Applications IX (June 15-19, 2020 Bergen, Norway)
- Co-organizer of the Inspire Summerschool (July 29 - August 10, 2019 Geilo, Norway)

## SELECTED PUBLICATIONS

- [1] Birane Kane. Using dune-fem for adaptive higher order discontinuous galerkin methods for strongly heterogenous two-phase flow in porous media. *Archive of Numerical Software*, 5(1), 2017.
- [2] Birane Kane, Robert Klöforn, and Christoph Gersbacher. hp-Adaptive Discontinuous Galerkin Methods for Porous Media Flow. In Clément Cancès and Pascal Omnes, editors, *Finite Volumes for Complex Applications VIII - Hyperbolic, Elliptic and Parabolic Problems*, pages 447–456, Cham, 2017. Springer International Publishing.
- [3] Birane Kane. *Adaptive higher order discontinuous Galerkin methods for porous-media multiphase flow with strong heterogeneities*. PhD thesis, 2018.
- [4] Andreas Dedner, Birane Kane, Robert Klöforn, and Martin Nolte. Python framework for hp-adaptive discontinuous galerkin methods for two-phase flow in porous media. *Applied Mathematical Modelling*, 67:179–200, 2019.
- [5] Birane Kane, Robert Klöforn, and Andreas Dedner. Adaptive discontinuous galerkin methods for flow in porous media. In Florin Adrian Radu, Kundan Kumar, Inga Berre, Jan Martin Nordbotten, and Iuliu Sorin Pop, editors, *Numerical Mathematics and Advanced Applications ENUMATH 2017*, pages 367–378, Cham, 2019. Springer International Publishing.