Flatiron Internal Conference: Flatiron-wide Algorithms and Mathematics

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Report of Contributions
**Numerical Computing: Basics and Pitfalls**

*Thursday, 14 October 2021 09:10 (1 hour)*

**Presenter:** BARNETT, Alex (CCM, Flatiron Institute, Simons Foundation)

**Session Classification:** Numerical Computing: Basics and Pitfalls
The interpolative decomposition

Thursday, 14 October 2021 10:20 (30 minutes)

The interpolative decomposition, with an application to the efficient representation of imaginary time Green’s functions in quantum many-body physics

Presenter: KAYE, Jason (CCM)
Session Classification: The interpolative decomposition
Recursive skeletonization and its applications

Thursday, 14 October 2021 10:50 (30 minutes)

Presenter: GREENGARD, Leslie (CCM / NYU)

Session Classification: Recursive skeletonization and its applications
Dynamic mode decomposition

Thursday, 14 October 2021 14:00 (30 minutes)

Presenter: SENGUPTA, Anirvan (CCQ & CCM)

Session Classification: Dynamic mode decomposition
Biomolecular simulations

Thursday, 14 October 2021 15:10 (30 minutes)

Presenter:  HANSON, Sonya (Max Planck Institute of Biophysics)

Session Classification:  Biomolecular simulations
Finite Volume Schemes for Radiation Magnetohydrodynamics in Astrophysics

Thursday, 14 October 2021 11:30 (30 minutes)

Presenter: JIANG, Yan-Fei (CCA)

Session Classification: Finite Volume Schemes for Radiation Magnetohydrodynamics in Astrophysics
Contribution ID: 32
Type: not specified

TBD

Presenter: WONG, Kaze (CCA)
Session Classification: Finite Volume Schemes for Radiation Magnetohydrodynamics in Astrophysics
Neural stochastic ODEs for scRNA-seq

Thursday, 14 October 2021 14:30 (30 minutes)

Presenter:  RASMUSSEN, Anders (CCB)

Session Classification:  Neural stochastic ODEs for scRNA-seq
The Julia Programming Language

Thursday, 14 October 2021 15:40 (30 minutes)

Presenter: STOUDENMIRE, Miles (Flatiron CCQ)
Session Classification: The Julia Programming Language
Differentiable forward models in cosmology

Thursday, 14 October 2021 16:20 (20 minutes)

Presenters:  MODI, Chirag (CCA & CCM); ZHOU, Wenda (CCM)
Session Classification:  Differentiable forward models in cosmology
Bayesian approaches to Inverse Problems

Friday, 15 October 2021 09:10 (1 hour)

Presenter: CARPENTER, Bob (CCM)
Session Classification: Bayesian approaches to Inverse Problems
Scaling and Generalizing Variational Inference for Bayesian Analysis

Friday, 15 October 2021 10:20 (1 hour)

Presenter: BLEI, David (CCM)

Session Classification: Scaling and Generalizing Variational Inference for Bayesian Analysis
Algorithmic differentiation

Friday, 15 October 2021 14:00 (20 minutes)

Presenter: SMITH, Barry (CCM)
Session Classification: Algorithmic differentiation
Theoretical framework for active chiral fluids

Friday, 15 October 2021 12:00 (30 minutes)

Presenter: PLOCHOCKA, Aleksandra (CCB & CCM)
Session Classification: Theoretical framework for active chiral fluids
Spectral methods

Friday, 15 October 2021 11:30 (30 minutes)

Presenter: FORTUNATO, Daniel (CCM)
Session Classification: Spectral methods
Wavelet transforms and their applications

Friday, 15 October 2021 14:30 (30 minutes)

Presenter:  EICKENBERG, Michael (CCM)
Session Classification:  Deep Learning Short Talks
Symmetry-preserving neural networks

*Friday, 15 October 2021 15:10 (30 minutes)*

**Presenter:** HAN, Jiequn (CCM)

**Session Classification:** Symmetry-preserving neural networks
The interface between deterministic and stochastic processes in developing systems

Friday, 15 October 2021 15:40 (30 minutes)

Presenter: GAVRILCHENKO, Tatyana (CCB)

Session Classification: The interface between deterministic and stochastic processes in developing systems
Superresolution in astrophysical simulations and visualizations

Thursday, 14 October 2021 12:00 (30 minutes)

Presenter: WONG, Kaze (CCA)
Session Classification: Superresolution in astrophysical simulations and visualizations