

Athena ++ Workshop Speaker Agenda

Date: 8th May, 2022 (Day 1)

Time: 8:30am-7pm

162 5th Avenue, 10010 New York, NY Flatiron Institute, 2nd floor Auditorium

Chair: Phil Armitage (AM), Omer Blaes (PM), Eliot Quataert (PM)

Time	Speaker	Title
8:30		Registration and Breakfast
9:20	Phil Armitage	Welcome
9:30	Phil Armitage	The Athena / Zeus contribution to planet formation
9:55	Matt Kunz	Looking in the (magnetic) mirror: lessons in life and anisotropic transport with Jim
10:20	Omer Blaes	Radiation MHD in Accretion Flows: The Debt We Owe to Jim
10:45		Break
11:15	Shane Davis	Radiation Magnetohydrodynamics of Black Hole Accretion
11:40	Eliot Quataert	Polarimetric signatures of energy extraction from a spinning black hole
12:05	Tom Gardiner	Athena in the Beginning (Numerics, Principles, Science & Lessons Learned)
12:30		Lunch
13:30	Takayoshi Sano	

1:55	Daniel Proga	A personal view of the scientific career of Jim Stone - a computer charmer who has been figuring out the physics of fluid flows in the heavens
14:20	Eve Ostriker	Building a dynamic model of the ISM with Zeus, Athena, and Jim
14:45	Jianjun Xu	Running Athena++ in the Cloud
15:00	Break	
15:30	Steve Balbus	Recalcitrant problems of classical disc theory
15:55	Charles Gammie	Inspiring Convergence
16:20	Peter Teuben	Stoneware through the ages
16:45	Final remarks by Jim Stone	
17:00	Wine & Cheese Hour (11th Floor Dining room)	
17:30-8:00	Dinner (11th Floor Dining room)	

Athena ++ Workshop Speaker Agenda

Date: 9th May, 2022 (Day 2)

Time: 8:30am-6pm

162 5th Avenue, 10010 New York, NY Flatiron Institute, 2nd floor Auditorium Chair:

Yan-Fei Jiang (AM), Shane Davis (AM), Chris White(PM), Kengo Tomida (PM)

Time Time	Speaker	Title
8:30	Breakfast	
9:00	Sean Ressler	Multi-Scale Wind-Fed Simulations of Sagittarius A*
9:20	Minghao Guo	Toward Horizon-scale Accretion onto Supermassive Black Holes in Elliptical Galaxies
9:40	Prasun Dhang	How to make an accretion disk MAD?
9:55	Wenrui Xu	A new model for 3D radiatively inefficient accretion flows
10:15	Christopher Bambic	Local shearing-box models of two-temperature AGN coronae: Structure, outflows, energetics, and conduction
10:30	Break	
11:00	Bri Mills	Monte Carlo spectral calculations of Athena++ simulations with multi-group for super-Eddington accretion onto a stellar mass black hole
11:20	Amy Secunda	Simulating Reprocessed AGN Light Curves Using Multi-Frequency Radiation in Athena++
11:35	Sergei Dyda	Time Dependent Line Driven Disc Winds - X ray Irradiation

11:50	Yixian Chen	Radiation Hydrodynamics Simulation of Gravitational Instability in AGN Disks: Radiation Pressure Enhances Star Formation
12:05	Tim Waters	Simulations of thermal instability using Athena++'s implicit RHD module
12:30	Lunch	
13:35	Lizhong Zhang	Magnetic Opacity Effects in Neutron Star Accretion Columns - Results and New Numerical Algorithm
13:55	Goni Halevi	Magnetic field amplification in post-merger accretion disks
14:15	Tejas Prasanna	The early evolution of magnetars
14:30	William Cook	Neutron Star Evolutions with Athena++ in Dynamical Spacetimes
14:45	Poster presentations	2 minutes/ poster
3:00	Break	
15:35	Morgan MacLeod	A heartbreak star: Using Athena to model tidal wave breaking in an extreme heartbeat star system
15:55	Jared Goldberg	3D Envelopes of Evolved Massive Stars and their Explosions
16:15	Ian Rabago	Warps and Breaks in Protoplanetary Disks
16:30	Haiyang Wang	Hydrodynamical Simulations of Circumbinary Accretion: Balance between Heating and Cooling
16:45	Damien Gagnier	Post-dynamical inspiral phase of common envelope evolution: Binary orbit evolution and angular momentum transport
17:05	Discussion	

Athena ++ Workshop Speaker Agenda

Date: 10th May, 2022 (Day 3)

Time: 8:30am-6pm

162 5th Avenue, 10010 New York, NY Flatiron Institute, 2nd floor Auditorium Chair: Chang Goo Kim (AM), Xuening Bai (AM), Chao-Chin Yang (PM), Zhaohuan Zhu (PM)

Time Time	Speaker	Title
8:30		Breakfast
8:55	Lachlan Lancaster	Feedback from Massive Stars in Turbulent, Ionized, and Magnetized Environments
9:15	Drummond Fielding	Push it to the limit: Plasmoids in the Multiphase ISM
9:35	Ka Wai HO	Multi phase media and the HI filaments
9:50	Lucia Armillota	Cosmic-ray transport in simulations of star forming galactic disks
10:10	Xiaoshan Huang	A First Bright Day for TDEs
10:30		Break
10:55	Can Cui	Gas Dynamics in Protoplanetary and Debris Disks
11:15	Yisheng Tu	Disk formation and evolution in magnetized molecular cloud core with turbulence and ambipolar diffusion using Adaptive Mesh Refinement in ATHENA++
11:30	Shinsuke Takasao	A closer look at star-disk interaction of young stars
11:50	Zhaohuan Zhu	Global Ideal MHD simulations: from net vertical field simulations to magnetospheric accretion

12:05	Shangjia Zhang	Vertical Shear Instability in Protoplanetary Disks with Stellar Irradiation
12:30	Lunch	
13:35	Konstantin Gerbig	On the Prospects of Hurricane-like Vortices in Protoplanetary Disks
13:50	Ruobing Dong (remote)	Using Athena++ to study planet formation and disk-planet interactions (remote)
14:10	Xiaoyi Ma	Simulating rings and gaps induced by vortices using Athena++
14:25	Yuhiko Aoyama	Type II planet-disk interaction in windy protoplanetary disks
14:40	Sabina Sagynbayeva	Feeding giant planets: accretion onto circumplanetary disks
14:55	Jordan (JT) Laune	The effects of gas accretion on giant planet migration
15:00	Break	
15:40	Avery Bailey	Short Characteristics Radiative Transfer for Models of Planetary Envelopes
16:00	Huazhi Ge	A stable and superadiabatic weather layer in Jupiter induced by moist convection --- An application to the planetary atmosphere study by Athena++
16:15	Logan Prust	Planetary Engulfment in Athena++
16:30	Chi-Ho Chan	Magnetorotational instability in eccentric disks
16:45	Yue Hu	Diagnose Turbulence in Partially Ionized Medium with AthenaK
17:05	Discussion	

Athena ++ Workshop Speaker Agenda

Date: 11th May, 2022 (Day 4)

Time: 8:30am-6pm

162 5th Avenue, 10010 New York, NY Flatiron Institute, 2nd floor Auditorium

Chair: Yan-Fei Jiang (AM), Xuening Bai (PM)

Time	Speaker	Title
8:30	Breakfast	
9:00	Yan-Fei Jiang	Radiation MHD
9:30	Shane Davis, B. Connor McClellan	MC Radiation
10:10	Jeong-Gyu Kim	Adaptive ray-tracing
10:30	Break	
11:10	Chris White, Patrick Mullen	GR Radiation
11:50	David Radice, Boris Daszuta	Numerical Relativity
12:30	Lunch	
13:30	Chao-Chin Yang	Dust particles
14:10	Pinghui Huang, Ziyang Xu	Dust fluids
15:00	Break	
15:30	Yanfei Jiang, Xihui Zhao	Cosmic-ray fluids
16:10	Michael Zhang	Hybrid-PIC
16:40	Xuening Bai, Xiaochen Sun, Zitao Hu	MHD-PIC
17:30	Discussion	

Athena ++ Workshop Speaker Agenda

Date: 12th May, 2022 (Day 5)

Time: 8:30am-6pm

162 5th Avenue, 10010 New York, NY Flatiron Institute, 2nd floor Auditorium

Chair: Kengo Tomida (AM), Chris White (PM), Jim Stone (PM)

Time	Speaker	Title
8:30	Breakfast	
9:00	Munan Gong (remote), Alexei Poludnenko	Chemical/Nuclear Reaction
9:40	Chang-Goo Kim, Kazunari Iwasaki	ISM Physics
10:20	Discussion	
10:30	Break	
11:00	Jacob Fields	Equation-of-State
11:20	Kengo Tomida, Sanghyuk Moon, Tomoyuki Hanawa	Self-Gravity, Sink Particle
12:20	Discussion	
12:30	Lunch	
13:30	Jim Stone	AthenaK
14:00	Josh Dolence	Parthenon
14:30	Philipp Grete	AthenaPK
15:00	Break	
15:30	Kyle Felker, Tomohiro Ono, George Wong	AthenaK
17:00	Discussion	