

**KAVLI INSTITUTE FOR THEORETICAL PHYSICS**  
**www.kitp.ucsb.edu**

**KITP Conference: Disks, Dynamos, and Data: Confronting MHD  
 Accretion Theory with Observations**

(Jan 9 - Mar 30, 2017)

**Coordinators: Catherine Espaillat, Christian Knigge, Jim Stone, and  
 Jean-Pierre Lasota-Hirszowicz**

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**Monday, Feb 06, 2017**

**Protoplanetary Disks I, Chair: Jim Stone (Princeton)**

8:50am	Lars Bildsten (KITP)	Welcome
9:00am	Meredith Hughes (Wesleyan)	Observational constraints on turbulence in protoplanetary disks from spatially resolved molecular-line observations
9:45am	Neal Turner (JPL/Caltech)	Detecting transport processes at work in protostellar disks
10:30am		<b>Morning Break</b>
11:00am	Ilsedore Cleeves (CfA/Harvard)	Disk-ionization properties as revealed by molecular emission in disks
11:45am	Geoffroy Lesur (Grenoble)	Global dynamics of protoplanetary disks: The combined influence of non-ideal MHD and winds
12:30pm		<b>Lunch Break</b>

**Protoplanetary Disks II, Chair: Neal Turner (JPL/Caltech)**

2:00pm	Xuening Bai (CfA/Harvard)	Towards the most realistic MHD simulations of protoplanetary disks
2:45pm	Richard Nelson (Queen Mary London)	Turbulence in protoplanetary disks: the roles and influence of the vertical shear (VSI) and spiral wave instabilities (SWI)
3:30pm		<b>Afternoon Break</b>
4:00pm	Catherine Espaillat (Boston U.)	Footprints of the magnetosphere: The star-disk connection in young accreting objects
4:45pm	Chris Johns-Krull (Rice)	Magnetically controlled accretion onto young stars: Testing current models
5:30pm		<b>SHUTTLE TO BWSCI</b>

**Tuesday, Feb 07, 2017**

**Protoplanetary Disks III, Chair: Catherine Espaillat (Boston U.)**

9:00am	Natalia Dzyurkevich (MPIA)	What molecular-cloud collapse can teach us about initial conditions for planet formation in disks
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- 9:45am Joan Najita (NOAO) Spectroscopic probes of turbulence in the planet-formation region of disks
- 10:30am **Morning Break**
- 11:00am Zhaohuan Zhu (UNLV) Young planets in protoplanetary disks: Theory confronts observations
- 11:45am Ted Bergin (Michigan) Discussion Session
- 11:45am Lee Hartmann (Michigan) Discussion Session
- 12:30pm **Lunch Break**
- Close Binaries I, Chair: Christian Knigge (Soton)**
- 2:00pm Paula Szkody (Washington) Intriguing light curves of dwarf novae: Testbeds for accretion disk theories
- 2:45pm Matt Coleman (UCSB) Convection modifies MHD turbulence in accretion disks
- 3:30pm **Afternoon Break**
- 4:00pm Nick Higginbottom (Soton) Thermal disk winds in X-ray binaries: Realistic heating and cooling rates give rise to slow, but massive outflows
- 4:45pm Daniel Proga (UNLV) Radiation driven winds from MHD accretion disks
- 5:30pm **POSTER SESSION / RECEPTION**
- 6:00pm **SPECIAL EVENTS DINNER**
- 8:00pm **SHUTTLE TO BWSCI**

### Wednesday, Feb 08, 2017

#### **Close Binaries (II), Chair: Paula Szkody (U. Washington)**

- 9:00am Fiona Harrison (Caltech) Ultraluminous X-ray sources: Recent progress and new puzzles
- 9:45am Aleksander Sadowski (MIT) Simulations of radiative accretion flows at the lowest and not-so-low accretion rates
- 10:30am **Morning Break**
- 11:00am Paul Groot (Radboud) Observations of spiral density waves and dynamic behavior of accretion disks in (ultra) compact binaries
- 11:45am Christian Knigge (Univ. of Southampton) Discussion Session
- 11:45am J.-P. Lasota (CNRS) Discussion Session
- 12:30pm **Lunch Break**
- 2:00pm **FREE AFTERNOON-SHUTTLE AVAILABLE TO BWSCI**

### Thursday, Feb 09, 2017

#### **Disks in AGN I, Chair: Charles Gammie (Illinois)**

9:00am	Chris Done (Durham)	Black-hole observations and MRI simulations
9:45am	Omer Blaes (UCSB)	Theoretical issues in luminous AGN accretion flows
10:30am		<b>Morning Break</b>
11:00am	Chelsea MacLeod (CfA/Harvard)	A systematic search for changing-look quasars in SDSS
11:45am	George Chartas (College of Charleston)	Quasar accretion-disk tomography
12:30pm		<b>Lunch Break</b>
<b>Disks in AGN II, Chair: Monika Moscibrodzka (Radboud)</b>		
2:00pm	Chris Reynolds (Maryland)	Towards a first principles understanding of variability from accreting black holes
2:45pm	Anna Pancoast (CfA/Harvard)	Disks in the broad-line region of AGN
3:30pm		<b>Afternoon Break</b>
4:00pm	Alexander Tchekhovskoy (LBL)	What makes a good jet?
4:45pm	Yan-fei Jiang (KITP)	Resolving puzzles of AGN observations based on 3D global radiation MHD simulations of accretion disks
5:30pm		<b>POSTER SESSION / RECEPTION</b>
6:00pm		<b>SPECIAL EVENTS DINNER</b>
8:00pm		<b>SHUTTLE TO BWSCI</b>

### Friday, Feb 10, 2017

#### **Disks in AGN III, Chair: Omer Blaes (UCSB)**

9:00am	Charles Gammie (Illinois)	Simulations of low accretion rate-black holes
9:45am	Monika Moscibrodzka (Radboud)	Polarization of light and Faraday rotation in GRMHD simulations of the jet launching zone of M87
10:30am		<b>Morning Break</b>
11:00am	Jason Dexter (MPE)	Testing MHD accretion theory with event-horizon scale observations of low-luminosity AGN
11:45am	Chris Done (Durham Univ.)	Discussion Session
11:45am	Chris Reynolds (Maryland)	Discussion Session
12:30pm		<b>Lunch Break</b>
2:00pm	<b>CONFERENCE END-SHUTTLE TO BWSCI *Also available to SB Airport and SB Airbus, Goleta location (See Registration Desk to sign up.)</b>	