

# Origin, growth and feedback of black holes in dwarf galaxies

## Program

Time	<b><u>Day 1</u></b> <b>Monday 12/9</b>	
9:00-10:30	<b>Session 1</b> Introduction to dwarf galaxies: observation and theory	9:00-9:25 Registration
		9:25-9:30 Welcome
		9:30-10:10 <b>Michelle Collins (review)</b> - Observations of dwarf galaxies: a review
		10:10-10:30 <b>Angel Lopez Sanchez</b> - The HI KOALA IFS Dwarf galaxy Survey (Hi-KIDS) - <b>ONLINE</b>
10:30-11:00	Coffee Break	
11:00-12:30		11:00-11:40 <b>Justin Read (review)</b> - Simulations of dwarf galaxies: a review
		11:40-12:00 <b>Jorge Moreno</b> - Galaxies lacking dark matter
		12:00-12:30 <b>Joe Silk (invited)</b> - The dark side of dwarf galaxies
		12:30-12:40 Discussion
12:40-14:40	Lunch	
14:40-16:00	<b>Session 2</b> Black hole formation in dwarf galaxies	14:40-15:10 <b>Jillian Bellovary (invited)</b> - The Connection Between Seeds and Massive Black Holes in Dwarf Galaxies
		15:10-15:30 <b>Yuxiang Qin</b> - Dwarf galaxies during reionization
		15:30-15:50 <b>John Regan</b> - Massive black hole formation in overdense environments
		15:50-16:10 <b>Dominik Schleicher</b> - Formation of the first supermassive black holes via collisions and accretion - <b>ONLINE</b>
16:10-16:40	Coffee Break	
16:40-18:00		16:40-17:00 <b>Sadegh Khochfar</b> - Children of the Cosmic Web: The Birth of Black Holes - <b>ONLINE</b>
		17:00-17:20 <b>Francesco Paolo Rizzuto</b> - The formation of SMBH seeds in dense and compact star clusters
		17:20-17:40 <b>Alessandro Lupi</b> : Modeling seed black hole formation and evolution in low-mass galaxies
		17:40-18:00 Discussion

Time	<u>Day 2</u>	Tuesday 13/9
9:00-10:30	<b>Session 3</b> The massive black hole population in dwarf galaxies - theory	9:00-9:40 <b>Marta Volonteri (review)</b> - Massive black holes in dwarf galaxies: predicted origins and properties
		9:40-10:00 <b>Ricarda Beckmann</b> - Population statistics of intermediate mass black holes in dwarf galaxies from NewHorizon
		10:00-10:20 <b>Daniele Spinoso</b> - Shaping the population of massive BHs in local dwarf galaxies with semi-analytic modeling - <b>ONLINE</b>
		10:20-10:30 <b>Flash talks</b> <ul style="list-style-type: none"> <li>- <b>Alessandro Trinca</b> - The low-end of the black hole mass function at cosmic dawn -ONLINE</li> <li>- <b>Karamveer Kaur</b> - Dynamical Friction in Cored Dwarfs to stall or not to stall?</li> </ul>
10:30-11:00	<b>Coffee Break</b>	
11:00-11:40		11:00-11:20 <b>Michael Tremmel</b> - The hidden population of massive black holes in simulated dwarf galaxies
		11:20-11:40 <b>Discussion</b>
11:40-12:40	<b>Session 4</b> The massive black hole population in dwarf galaxies - observations	11:40-12:20 <b>Jenny Greene (review)</b> - Observations of intermediate-mass black holes <b>ONLINE</b>
		12:20-12:40 <b>Anna Ferre-Mateu</b> - On the search for IMBHs (and SMBHs) in low-mass galaxies
12:40-14:40	<b>Lunch</b>	
14:40-16:00		14:40-15:00 <b>Urmila Chadaymmuri</b> - Constraining the black hole occupation fraction in dwarf galaxies with eROSITA
		15:00-15:20 <b>Sheila Kannappan</b> - Hiding in Plain Sight: Low-Metallicity, Star-Forming Dwarf AGN Hosts Are Common in Optical Emission Line Diagnostic Diagrams - <b>ONLINE</b>
		15:20-15:40 <b>Mugdha Polimera</b> - A High Dwarf AGN Frequency from a z~0 Volume-limited Multiwavelength Census - <b>ONLINE</b>
		15:40-16:00 <b>Mar Mezcua</b> -The MaNGA AGN dwarf galaxies (MAD) project: A new sample of AGN in dwarf galaxies with spatially resolved spectroscopy
16:00-16:40	<b>Coffee break / Remote informal chat between ECRs and Jenny Greene</b>	
16:30-18:00		16:40-17:00 <b>Jiri Svoboda</b> - Do X-rays reveal AGN in Green Pea galaxies?
		17:00-17:20 <b>Chien-Ting Chen</b> - Obscured AGN in dwarf galaxies
		17:20-17:30 <b>Flash talks:</b> <ul style="list-style-type: none"> <li>- <b>Skarleth Motino Flores</b> - Study of Dwarf Galaxies as Local Analogs to High-Redshift <b>ONLINE</b></li> <li>- <b>Ragadeepika Pucha</b> - Co-evolution of Dwarf Galaxies and their Black Holes: Early Results from DESI <b>ONLINE</b></li> </ul>
		17:30-18:00 <b>Discussion</b>

Time	<b><u>Day 3</u></b> <b>Wednesday 14/9</b>	
<b>9:00-10:30</b>		<b>9:00-9:20 Sabrina Stierwalt</b> - Determining the AGN fraction in dwarf galaxy mergers <b>ONLINE</b>
		<b>9:20-9:40 Malgorzata Siudek</b> - AGN in dwarfs: does the environment matter?
		<b>9:40-9:50 Flash talk</b> <ul style="list-style-type: none"> <li>- <b>Catherine Witherspoon</b> - Environment of Quiescent Low-Mass Galaxies Hosting AGN</li> <li>- <b>Katie Chamberlain</b> - Dwarf galaxy interactions and mergers in cosmological simulations and implications for IMBHs</li> </ul>
		<b>10:00-10:10 Discussion</b>
	<b>Session 5</b> <b>Black hole accretion and feedback in dwarfs</b>	<b>10:10-10:30 Igor Chilingarian</b> - Active galactic nuclei powered by intermediate mass black holes and what they tell us about the black hole growth
<b>10:30-11:00</b>	<b>Coffee Break</b>	
<b>11:00-12:40</b>		<b>11:00-11:20 Yanlong Shi</b> - Hyper-Eddington black hole growth in star-forming molecular clouds and galactic nuclei <b>ONLINE</b>
		<b>11:20-11:40 Almudena Prieto</b> - Novel black-hole mass scaling relation based on coronal gas emission and its dependence with the accretion disc
		<b>11:40-12:00 Jorge Sanchez Almeida</b> - Discovery of faint double-peak H $\alpha$ emission in the halo of low redshift galaxies: is it produced by rogue IMBHs?
		<b>12:00-12:20 Sophie Koudmani</b> - The impact of AGN-driven outflows on dwarf galaxies
		<b>12:20-12:40 Flash talks:</b> <ul style="list-style-type: none"> <li>- <b>Haojie Hu</b> - Long-term evolution of supercritical black hole accretion with outflows: a subgrid feedback model for cosmological simulations <b>ONLINE</b></li> <li>- <b>Francesco Bolati</b> - On the connection between AGN outflows and massive black hole spin</li> <li>- <b>Christian Partmann</b> - The impact of low mass AGN on the evolution of simulated dwarf galaxies</li> <li>- <b>Roberto Hazenfratz Marks</b> - Study of AGN feedback in dwarf spheroidal-like galaxies of the Local Group with SPH simulations</li> </ul>
<b>12:40-14:40</b>	<b>Lunch</b>	
<b>14:40-17:00</b>		<b>14:40-15:10 Amy Reines (invited)</b> - Black-hole-triggered star formation in the dwarf galaxy Henize 2-10 <b>ONLINE</b>
		<b>15:10-15:30 Weizhe Liu</b> - Probing AGN feedback in nearby dwarf galaxies <b>ONLINE</b>
		<b>15:30-15:50 Archana Aravindan</b> - AGN vs. Stellar Feedback in dwarf galaxies <b>ONLINE</b>
		<b>15:50-16:20 Discussion</b>
		<b>16:20-17:00 Remote informal chat between ECRs and Amy Reines</b>
<b>20:30</b>	<b>Conference Dinner</b>	

Time	<b><u>Day 4</u></b> <b>Thursday 15/9</b>	
<b>9:00-10:30</b>	<b>Session 6</b> <b>The quest for IMBHs: dynamical detections, TDEs and variability</b>	<b>9:00-9:30 Elena Gallo (invited)</b> - New X-ray-based constraints to the local black hole occupation fraction in dwarf galaxies
		<b>9:30-9:50 Paula Sanchez Saez</b> - Searching for low-mass AGNs and IMBHs in massive datasets with machine learning
		<b>9:50-10:10 Jun Yang</b> - Close look at the radio nuclei of two dwarf galaxies
		<b>10:10-10:30 Ingyin Zaw</b> - Multiwavelength study of IC750. A low mass galaxy hosting an anomalously low mass nuclear black hole
<b>10:30-11:00</b>	<b>Coffee Break</b>	
<b>11:00-12:40</b>		<b>11:00-11:30 Anil Seth (invited)</b> - Dynamical observations of massive black holes in dwarf galaxies and stripped galaxy nuclei
		<b>11:30-11:50 Dieu Nguyen</b> - Hunting Intermediate-mass Black Holes with ELT
		<b>11:50-12:10 Renuka Pechetti</b> - A search for IMBHs in nearby stripped nuclei - <b>ONLINE</b>
		<b>12:10-12:30 Colin Burke</b> - Optical variability of IMBHs and implications for their identification
		<b>12:30-12:40 Flash talks:</b> <ul style="list-style-type: none"> <li>- <b>Hugo Tranin</b> - A careful search for X-ray detected intermediate mass black holes</li> <li>- <b>Julen Untzaga San Vicente</b> - A search for wandering black holes in the Milky Way</li> </ul>
<b>12:40-14:40</b>	<b>Lunch</b>	
<b>14:40-16:00</b>		<b>14:40-15:10 Paulina Lira (invited)</b> - What do we know about variability from IMBHs?
		<b>15:10-15:30 Flash talks:</b> <ul style="list-style-type: none"> <li>- <b>Paula Caceres Burgos</b> - Search for Intermediate Mass Black Holes using fast optical variability</li> <li>- <b>Erik Wasleske</b> - Variable Low-mass AGN found in the GALEX Time Domain Survey</li> <li>- <b>Alexander Messick</b> - An X-ray analysis of variable AGN candidates in dwarf galaxies</li> </ul>
		<b>15:30-16:00 Discussion</b>
<b>16:00-16:30</b>	<b>Coffee Break</b>	
<b>16:30-18:00</b>	<b>Session 7</b> <b>NSCs and IMBHs</b>	<b>16:30-17:00 Nadine Neumayer (invited)</b> - Black holes and nuclear star clusters in dwarf galaxies
		<b>17:00-17:20 Annti Rantala</b> - Simulating massive black holes in the nuclear star clusters of dwarf galaxies using the novel BIFROST code
		<b>17:20-17:40 Nils Hoyer</b> - Nuclear star cluster properties unfold their formation mechanism in dwarf galaxies
		<b>17:40-18:00 Benjamin Davis</b> - Ultracompact Dwarf Galaxies: sowing black holes and growing bulges via minor mergers

Time	<b><u>Day 5</u></b> <b>Friday 16/9</b>	
9:00-10:30		9:00-9:20 <b>Sabine Thater</b> - Shedding the light on the evolution of black holes with nuclear star clusters
		9:20-9:40 <b>Katja Fahrion</b> - Nuclear star cluster formation in dwarf galaxies
		9:40-10:00 <b>Mayte Alfaro Cuello</b> - Constraining the existence of the central black hole in the nucleus of the Sagittarius dwarf spheroidal galaxy
		10:00-10:30 <b>Discussion</b>
10:30-11:00	<b>Coffee Break</b>	
11:00-13:00	<b><u>Session 8</u></b> <b>The future: new instruments and GW</b>	11:00-11:30 <b>Elena Rossi (invited)</b> - Massive black hole population revealed by gravitational waves and tidal disruption events
		11:30-11:50 <b>Thierry Contini</b> - From galaxy pairs counts to black hole mergers: prospects for gravitational waves detections
		<b>11:50-12:10 Flash Talks</b> <ul style="list-style-type: none"> <li>- <b>Mudit Garg</b> - The impact of gravitational waves from intermediate mass black hole binaries in the LISA band</li> <li>- <b>Chi An Dong Paez</b> - Multimessenger modeling of massive black holes with the Obelisk simulation</li> <li>- <b>Zorry Belcheva</b> - Dynamical friction experienced by supermassive black holes in numerical simulations</li> <li>- <b>Fazeel Khan</b> - Dynamics and Merger Timescales of Intermediate Mass Black Hole Binaries in Dwarf Galaxies <b>ONLINE</b></li> </ul>
		12:10-12:30 <b>Torsten Boeker</b> - Uncovering Intermediate Mass Black Holes with JWST: Pushing the Frontier
		<b>12:30-13:00</b> <b>Lucio Mayer: Summary talk and concluding remarks</b>