IAU Symposium on Hub–Filament Systems in Star Formation - Programme

Reorganised programme | Invited talks: 25 min | Contributed talks: 15 min | Poster blocks: 20 min

Time	Duration (min)	Type	Speaker / item	Talk title / programme item
Day 1				
08:30–09:15	45	**Registration**	Registration	Registration
09:15–09:30	15	**Welcome**	Organisers	Welcome note from the organisers
Session 1 — Hub–filament structures: the reservoir of star-forming dense gas				
Chair: ***Nanda Kumar***				
09:30–09:55	25	Invited	Nicolas Peretto	An observational review of Hub Filaments Systems
09:55–10:10	15	Contributed	Shingo Nozaki	Shock–Cloud Interaction as a Pathway to Hub–Filament System Formation in Magnetized Molecular Clouds
10:10–10:25	15	Contributed	Jens Kauffmann	The Kinematic and Astrochemical State of Hub-Filament Systems as seen through LEGO
10:25–10:40	15	Contributed	Raiga Kashiwagi	Formation of Hub–Filament Systems through Magnetized Filament Collisions: Insights from 3D MHD Simulations
10:40–11:10	30	**Coffee break**	Morning coffee	
11:10–11:30	20	**Poster presentation**	Poster block — Group 1	Siddhartha Biswas, Vipin Kumar, Fumiaki Yoshida, Himanshu Kumar, Jianjun Zhou (2)
11:30–11:45	15	Contributed	Shuichiro Inutsuka	An Origin of Hub-Filament Systems
11:45–12:00	15	Contributed	Satyajeet Moharana	JCMT-SURFING: Unveiling the Velocity-Coherent Filaments and Dense Cores in the Serpens South Hub Filament System
12:00–12:15	15	Contributed	Julian Reid Caza	Dynamics of Dense Gas Filaments in Serpens South
12:15–12:30	15	Contributed	Rohit Mandal	Quantification of systematic biases in continuum-derived dust temperature and column density
12:30–14:30	120	**Lunch break**	Lunch	Lunch / poster viewing
Session 2 — From cloud structure to hub formation: observations, dynamics and scaling				
Chair: ***Thushara PIllai***				
14:30–14:55	25	Invited	Daisei Abe	The Origin of Hub-Filament Systems: Radiation-MHD Simulations toward Understanding Massive Star Formation
14:55–15:10	15	Contributed	Arup Kumar Maity	A Rotating and Expanding Molecular Ring-like Structure at the Hub of a Hub–Filament System
15:10–15:25	15	Contributed	Ezequiel Gonzalez	Identifying filamentary structure in massive star forming protoclusters using ALMA data cubes
15:25–15:40	15	Contributed	Rahul Manishkumar Patel	Characterizing the hierarchical structure of filaments. I. On the origin of the length-mass (L-M) scaling relation
15:40–16:10	30	**Coffee break**	Afternoon coffee	
16:10–16:30	20	**Poster presentation**	Poster block — Group 2	Manish Chauhan, Ekjot Kaur, Muhammad Usman Shehu, Jiaerken Yeshengbieke, Shreya Pandey, Saurav Sen

Revised Programme_Table 1_Table

16:30–16:45	15	Contributed	Naval Kishore Bhadri	A Multiscale View of Hub-Filament Systems: From Cloud-Scale Filamentary Accretion to Protocluster Formation
16:45–17:00	15	Contributed	Shivan Khullar	Towards a predictive theory for the star formation outcome of Giant Molecular Clouds
19:00–19:30	30	**Special invited talk**	Phil Myers	A short history of filamentary star-forming clouds
19:30–20:30	60	**Welcome reception**	Welcome Reception	Windflower Resorts. Symposium Venue.
Day 2				
Session 3 — Fragmentation of low-mass filaments: cores, substructure and the IMF				
*Chair:**Archana Soam***				
09:30–09:55	25	Invited	Philippe André	The role of filaments and hub-filament systems in the origin of the prestellar core mass function and the IMF
09:55–10:10	15	Contributed	Chang Won Lee	Star and Dense Core Formation in Hub-Filamentary Clouds Using the Taeduk Radio Astronomy Observatory Survey of Filaments, the Universal Nursery of Sta
10:10–10:25	15	Contributed	Akshat Asthana	Quantifying Filament Fragmentation and Core-to-filament mass fractions
10:25–10:40	15	Contributed	Frederique Motte	Origin of the IMF revisited thanks to constraints on core subfragmentation and mass growth
10:40–11:10	30	**Coffee break**	Morning coffee	
11:10–11:30	20	**Poster presentation**	Poster block — Group 3	Hafiz Nazeer, Rushi Rajesh Mahajan, Sasi Mitra Behara, Indrajit Maity, Watson Paul Varricattu, Kazuhito Motogi
11:30–11:45	15	Contributed	Kshitiz Kumar Mallick	Fragmenting Filaments and Emerging Stars - An ALMA 1.3mm dust and molecular line study of OMC-1N
11:45–12:00	15	Contributed	Shusuke Utsumi	Core-Core Interactions as a Pathway to Very-Low-Mass Star Formation in Hub-Filament Systems
12:00–12:15	15	Contributed	Yingxi Li	A complete survey of filaments in Cygnus-X
12:15–12:30	15	Contributed	Manash Ranjan Samal	Probing Star Formation Scaling Laws in Parsec-Scale Cluster-Forming Clumps
12:30–14:30	120	**Lunch break**	Lunch	Lunch / poster viewing
Session 4 — Fragmentation of high-mass filaments: core growth and massive-star assembly				
*Chair: **Devendra Ojha***				
14:30–14:55	25	Invited	Suinan Zhang	Fragmentation in high-mass star-forming regions
14:55–15:10	15	Contributed	Lennart Böhm	How do massive stars keep growing? From hub feeding to core growth during feedback in W33 Main
15:10–15:25	15	Contributed	Rakesh Pandey	Hub-filament feeding a bloated massive protostar: multiscale accretion in IRAS 19520+2759
15:25–15:40	15	Contributed	Yudai Nishikawa	Probing Hot Disk Chemistry at the End Point of Mass Supply in Massive Star Formation
15:40–16:10	30	**Coffee break**	Afternoon coffee	

16:10–16:25	15	Contributed	Dana Makarova	Future massive-star growth in hub-filament systems: insights from a 3D simulation and synthetic observations
16:25–16:40	15	Contributed	Sandhyarani Panigrahy	Evidence for the gravity-driven and magnetically regularized gas flows feeding the massive protostellar cluster in Cepheus A
16:40–16:55	15	Contributed	Junhao Liu	The dominance of turbulence over magnetism in the formation of massive star cluster seeds
16:55–17:10	15	Contributed	Shantanu Basu	Massive Star Formation from Large Scale Magnetized flows
17:10–17:25	15	Contributed	Shivani Gupta	An ALMA study of a massive protocluster
Day 3				
Session 5 — Hub–filament systems as progenitors of clusters and massive stars				
Chair: ***Suinan Zhang***				
09:30–09:45	15	Contributed	Doris Arzoumanian	Mapping the evolution of magnetized hub-filament systems leading to the formation of star-clusters with low- to high-mass stars
09:45–10:00	15	Contributed	Harmeen Kaur	Identifying Multiple Hub–Filament Systems in the Sh 2-284 Star-Forming Complex
10:00–10:15	15	Contributed	Lokesh Kumar Dewangan	Discovery of a rich population of compact hub-filament systems in a single star-forming complex
10:15–10:30	15	Contributed	Rishi Chenatil	A Rich Population of Hub–Filament Systems in Cygnus X and Evidence for Hierarchical Star Formation
10:30–11:00	30	**Coffee break**	Morning coffee	
11:00–11:15	15	Contributed	Vineet Rawat	A Massive Cloud, A Modest Cluster: Hierarchical Collapse and Filament-fed Cluster Formation in G148.14+00.41
11:15–11:30	15	Contributed	Jeremy Raja Karam	The Connection Between Filament Morphology and Star Cluster Formation
11:30–11:45	15	Contributed	Saurabh Sharma	NGC 2316: A Hub-Filament System in Formation
11:45–12:00	15	Contributed	Masato Kobayashi	The Origin of Star Cluster Mass Functions in Molecular Cloud Evolution
12:00–12:15	15	Contributed	Rin Yamada	Filaments and Subsequent Stellar Cluster Formation in the Perseus Molecular Cloud
12:15–12:45	30	**Poster presentation**	Poster block — Group 4	Aayushi Verma, Cysil Tom Baby, Gregory Mathews Ben, Priya Shah Hasan, Neelam Panwar, Savir Ghai, Nanda Kumar (2)
12:45–14:30	105	**Lunch break**	Lunch	Lunch / poster viewing
14:30–18:30	240	**Visit to Mysuru Palace and Somanathapura Ancient Temple / Free Afternoon**		
19:00–21:30	120	**Conference dinner**	Conference dinner	Windflower Resorts. Symposium Venue.
Day 4				
Session 6 — Feedback on filamentary structures: from protostellar outflows to H II regions				
Chair: ***Masato Kobayashi***				

Revised Programme_Table 1_Table

09:30–09:55	25	Invited review	Stefanie Walch-Gassner	Invited review on stellar feedback (talk title to be confirmed)
09:55–10:10	15	Contributed	Paolo Suin	How ionising feedback restructures Hub-Filament Systems
10:10–10:25	15	Contributed	Sajay Sunny Mathew	The role of gravity, turbulence, and protostellar feedback in star formation
10:25–10:40	15	Contributed	Rohit Chaudhary	Understanding the importance of magnetic fields in the “collect and collapse” model of star formation: a case study towards S104 using JCMT SCUBA2/POL2
10:40–11:10	30	**Coffee break**	Morning coffee	
11:10–11:30	20	**Poster presentation**	Poster block — Group 5	Ariful Hoque, Amal George Sheridan, CV Sreejith, Jyotirmoy Dey, Mamta, Manojit Chakraborty, Tarak Chand
11:30–11:45	15	Contributed	Toktarkhan Komesh	Hypercompact H II Regions as Tracers of Massive Star Formation and Stellar Dynamics
11:45–12:00	15	Contributed	Aardra S	Tracing Star Formation Under Massive Star Feedback: A Multi-Wavelength Study of the Herbig Star PDS 255
12:00–12:15	15	Contributed	Manoj Puravankara	JWST Views of Protostellar Growth and Feedback in the Orion Filamentary Cloud
12:30–14:30	120	**Lunch break**	Lunch	Lunch / poster viewing
Session 7 — Magnetic fields: regulating flows, fragmentation and collapse				
Chair: ***Piyali Saha***				
14:30–14:55	25	Invited	Thushara Pillai	Where Magnetic Fields Fit in the Hub-Filament Picture
14:55–15:10	15	Contributed	Eswaraiah Chakali	Evidence for the gravity-driven and magnetically-regularized gas flows feeding the massive protostellar cluster in Cepheus A
15:10–15:25	15	Contributed	Ria Ramkumar	Characterising magnetic fields at the onset of star cluster formation
15:25–15:40	15	Contributed	Rahul Khanna	A numerical investigation of striations: The influence of magnetic fields and filamentary structures
15:40–16:10	30	**Coffee break**	Afternoon coffee	
16:10–16:30	20	**Poster presentation**	Poster block — Group 6	Piyali Saha, Sayan Panda, Upasana Rakesh Kumar Gupta, Swapnil Singh, Sujoy Karmakar, Rohit Kumar
16:30–16:45	15	Contributed	Mark Krumholz	How important are magnetic fields to filamentary star formation?
16:45–17:00	15	Contributed	Omkar Ratan Jadhav	Investigation of Hourglass-shaped Magnetic fields in the G35.20-0.74 Star-Forming Complex
17:00–17:15	15	Contributed	Chau Giang Nguyen	Magnetic field tomography in Protostellar Cores via Multiwavelength Dust emission polarization observations
Day 5				
Session 8 — Star-Gas connection, Hub–filament systems in extreme environments and beyond				
Chair: ***Saurabh Sharma***				
09:30–09:55	25	Invited	Michael Kuhn	Kinematics of Young Stars in Hub-Filament Systems
09:55–10:10	15	Contributed	Simran Singh	The Kinematics of Young Stellar Objects in the Extended Solar Neighbourhood

Revised Programme_Table 1_Table

10:10–10:25	15	Contributed	Arun Roy	ROCKETS: Detecting the Rocket Effect in Massive Young Stellar Cluster Environments with Gaia
10:25–10:55	30	**Coffee break**	Morning coffee	
10:55–11:20	25	Invited	Adam Ginsburg	Star formation and hub-filament systems in extreme environments
11:20–11:45	25	Invited	Kathryn Grasha	The Extragalactic View of Star Formation: From HII Regions to Galaxy Assembly
11:45–12:00	15	**Contributed**	Shashank Gairola	On the physical processes governing the multi-scale, filamentary network of star formation within galaxies
12:00–12:15	15	Contributed	Jessy Jose	Environmental Dependence of Star Formation in the Outer Milky Way
12:15–12:30	15	Contributed	Takashi Hosokawa	Filaments, the IMF, and Star Formation Efficiency Across Metallicity: Clustered High-Mass Star Formation in Turbulent Clouds
12:30–14:30	45	Lunch break	Lunch	Lunch / poster viewing
14:30–15:30	60	**Panel Discussion**	Panel Discussion	Impact of the Hub-Filament Geometry on the understanding of Star Formation
15:30–15:40	10	**Concluding remarks**	Organisers	Concluding remarks immediately after the Panel Discussion