



## **PROGRAM**

The 12th International Workshop on  
**SEquences and Their Applications (SETA)**



<https://seta-2024.github.io>

**July 1-5, 2024**

University of Essex, Essex, United Kingdom.

## SETA2024 - Schedule (July 01-05, 2024)

Monday	Tuesday	Thursday	Friday
08:30-09:50	08:30-09:00 Coffee & Tea	08:30-09:00 Coffee & Tea	08:30-09:00 Coffee & Tea
Registration Coffee & Tea	09:00-10:00 Keynote Talk 2 Pingzhi Fan	09:00-10:00 Keynote Talk 4 Christos Masouros	09:00-10:00 Keynote Talk 5 Nam Yul Yu
09:50-10:00 Opening			
10:00-11:00 Keynote Talk 1 Sihem Mesnager	10:00-10:30 Break	10:00-10:30 Break	10:00-10:30 Break
11:00-11:20 Break	10:30-12:10 Session 4 4 papers	10:30-12:10 Featured Invited Talk 10:30-11:20 Pantelimon Stănică 11:20-12:10 Wai-Ho Mow	10:30-12:10 Session 7 4 papers
11:20-12:10 Session 1 2 papers			
12:10-14:00 Lunch			
14:00-15:15 Session 2 3 Papers	14:00-15:00 Keynote Talk 3 Steven (Qiang) Wang	14:00-15:00 Panel Discussion Future Researches on Sequences	Departure
15:15-15:30	15:00-15:30 Break	15:00-15:30 Break	
Break			
15:30-17:10 Session 3 4 papers	15:30-16:45 Session 5 3 papers	15:30-16:45 Session 6 3 papers	
		18:30 Banquet at Wivenhoe House	
Session Topics			
Session 1: Autocorrelation of Sequences		Session 5: Permutations over Finite Fields	
Session 2: DeBruijn Sequences and Linear Complexity		Session 6: Randomness of Sequences	
Session 3: Crypt. Functions and Algebraic Codes		Session 7: Low-Correlation Sequences	
Session 4: Complementary Seq. and Arrays			

- Brief introductions of the invited speakers can be found at this link
- The arrangement on Wednesday can be found at this link

## SETA2024 Program (Monday)

08:30-9:50	Registration Break Coffee & Tea		
09:50-10:00	Conference Opening Maria Fasli Dean of the Faculty of Science and Health, the University of Essex		
10:00-11:00	Sihem Mesnager Keynote Talk Chair: Daniel Katz	On algebraic problems on finite fields and their importance more than ever in the study of S-boxes in block ciphers	abstract
11:00-11:20	Break		
Session 1: Autocorrelation of Sequences (Chair: Avik Adhikary)			
11:20-11:45	Gangsan Kim	Balanced binary sequences with favorable autocorrelation from cyclic relative difference sets	paper
11:45-12:10	Daniel Katz	Moments of autocorrelation demerit factors	paper
12:10-14:00	Lunch		
Session 2: De Bruijn Sequences and Linear Complexity (Chair: Chunlei Li)			
14:00-14:25	Guang Gong	Filtering modified de Bruijn sequences with designated linear complexity	paper
14:25-14:50	Martianus Frederic Ezerman	New successor rules to efficiently produce exponentially many binary de Bruijn sequences	paper
14:50-15:15	Domingo Gomez	On the linear complexity of Shrunk sequences	paper
15:15-15:30	Coffee & Tea Break		
Session 3: Cryptographic Functions and Algebraic Codes (Chair: Constanza Riera )			
15:30-15:55	Yongbo Xia	A direct method for calculating the differential spectrum of an APN power mapping	paper
15:55-16:20	Ana Salagean	Bounds for the average degree- $k$ monomial density of Boolean functions	paper
16:20-16:45	Guangkui Xu	Optimal few-weight codes from projective spaces	paper
16:45-17:10	Susanta Samanta	On the Counting of Involutory MDS Matrices	paper

## SETA2024 Program (Tuesday)

08:30-09:00	Coffee & Tea		
09:00-10:00	Pingzhi Fan Keynote Talk Chair: Tor Helleseth	Recent advances in signal design for integrated sensing & communications	abstract
10:00-10:30	Coffee & Tea Break		
Session 4: Complementary Sequences and Arrays (Chair: Qi Zeng)			
10:30-10:55	Kai Liu	Construction of cross Z-complementary sequence set with large CZC ratio	paper
10:55-11:20	Tao Yu	A construction of optimal Z-complementary code sets on partially $m$ -shift orthogonal complementary codes	paper
11:20-11:45	Dian Li	On average zero-correlation zone of Golay complementary pairs	paper
11:45-12:10	Kai Liu	New constructions of two-dimensional binary Z-complementary array pairs	paper
12:10-14:00	Lunch		
14:00-15:00	Steven (Qiang) Wang Keynote Talk Chair: Ana Salagean	A survey of compositional inverses of permutation polynomials over finite fields	paper
15:00-15:30	Coffee & Tea Break		
Session 5: Permutations over Finite Fields (Chair: Domingo Gomez)			
15:30-15:55	Mohit Pal	A proof of a conjecture on trivariate permutations	paper
15:55-16:20	Lucas Krompholz	On the bijectivity of the map $\chi$	paper
16:20-16:45	Steven Wang	An effective approach to enumerate universal cycles for $k$ -permutations	paper
End of Program			

## SETA2024 Program (Thursday)

08:30-09:00	Coffee & Tea		
09:00-10:00	Christos Masouros <a href="#">Keynote Talk</a> <i>Chair: Zilong Liu</i>	Sustainable and multifunctional wireless networks	abstract
10:00-10:30	Coffee & Tea Break		
<a href="#">Featured Invited Talk</a> ( <i>Chair: Chunlei Li</i> )			
10:30-11:20	Pantelimon Stănică	Threshold implementations and permutations' decompositions: a number theoretical approach	abstract
11:20-12:10	Wai-Ho Mow	Bus coding for low-power on-chip interconnects	abstract
12:10-14:00	Lunch		
14:00-15:00	Panel Discussion		
15:00-15:30	Coffee & Tea Break		
Session 6: Randomness of Sequences ( <i>Chair: Chaoyun Li</i> )			
15:30-15:55	Melis Aslan	Observations on NIST SP 800-90B entropy estimators	paper
15:55-16:20	Michael Vielhaber	Two pattern properties of binary sequences invariant under the continued fraction operator $K$ (the Berlekamp-Massey Algorithm)	paper
16:20-16:45	Muhiddin Uğuz	RW-9: A family of random walk tests	paper
End of Program			

## SETA2024 Program (Friday)

08:30-09:00	Coffee & Tea		
09:00-10:00	Nam Yul Yu Keynote Talk Chair: Guang Gong	Pseudorandom sequences for grant-free access in massive machine-type communications	abstract
10:00-10:30	Coffee & Tea Break		
Session 7: Low-Correlation Sequences (Chair: Yongbo Xia)			
10:30-10:55	Rajen Kumar	Multiple spectrally null constrained complete complementary codes of various lengths over small alphabet	paper
10:55-11:20	Yubo Li	Construction of multiple quasi-complementary sequence sets with low inter-set cross-correlation	paper
11:20-11:45	Qi Zeng	Hierarchical frequency hopping technique for heterogeneous multi-tier networks	paper
11:45-12:10	Avik Ranjan Adhikary	Circular quasi-Florentine rectangles and its application in designing optimal polyphase sequence sets	paper
12:10-12:15	Conference Closing Tor Helleseth		
12:15-14:00	Lunch		
End of SETA-2024			