



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

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

## SETA2024 Program (Tuesday)

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

## SETA2024 Program (Thursday)

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

## SETA2024 Program (Friday)

<b>08:30-09:00</b>	<b>Coffee &amp; Tea</b>		
<b>09:00-10:00</b>	Nam Yul Yu <i>Keynote Talk</i> <i>Chair: Guang Gong</i>	Pseudorandom sequences for grant-free access in massive machine-type communications	abstract
<b>10:00-10:30</b>	<b>Coffee &amp; Tea Break</b>		
<b>Session 7: Low-Correlation Sequences</b> ( <i>Chair: Yongbo Xia</i> )			
<b>10:30-10:55</b>	Dian Li	On average zero-correlation zone of Golay complementary pairs	paper
<b>10:55-11:20</b>	Yubo Li	Construction of multiple quasi-complementary sequence sets with low inter-set cross-correlation	paper
<b>11:20-11:45</b>	Qi Zeng	Hierarchical frequency hopping technique for heterogeneous multi-tier networks	paper
<b>11:45-12:10</b>	Avik Ranjan Adhikary	Circular quasi-Florentine rectangles and its application in designing optimal polyphase sequence sets	paper
<b>12:10-12:15</b>	<b>Conference Closing</b> Tor Helleseth		
<b>12:15-14:00</b>	<b>Lunch</b>		
<b>End of SETA-2024</b>			