REFERENCES, INDEX, & SYMBOLS AND NOTATIONS

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INDEX

Symbols and notations

1_A	Characteristic function for subset A 1.4
$\mathbf{B}$	Set of Boolean functions: $\mathbf{Q}^n \to \mathbf{Q}$ 2.1
$Bool$	Function: $\mathbf{R}^n \to \mathbf{Q}^n$ 2.1
$\mathrm{Car}F$	Carrier of transformation F 1.1
$\mathrm{CS}(F)$	Cycle structure of transformation F 2.3
$\mathrm{CY}(F)$	Set of all cycles in $\mathrm{GRAPH}(F)$ 1.1
$d(x)$	Density of x 1.3
$d(x,y)$	Distance 1.1
$d(x,A)$	$Distancebetweenapointandsets$1.1
$d(A,B)$	$Distancebetweensets$1.1
$d_H(x,y)$	Hamming distance 2.1
$d_R(x,y)$	Runs-based distance 7.4
$f\|a$	Boolean function defined by $(f\|a)x = f(x,a)$ 1.4
gcd	Greatest common devisor 1.2
$\mathrm{GRAPH}(F)$	Graph of transformation F 1.1
I	Identity transformation 2.1
$\mathrm{Im}\Psi$	Image of a set Ψ of sequences 6.1
l	Column vector whose every element is 1 4.3
$\mathbf{N}_m$	Residue class ring with m elements $\{1,2,...,m\}$ 1.2
1^m	$m-$ vector whose every coordinate is 1 5.5, 7.1
0^m	$m-$ vector whose every coordinate is 0 5.5, 7.1
$\mathbf{N}$	Residue class ring with n elements $\{1,2,...,n\}$, i.e. $\mathbf{N}_n$ 1.2
$O(\mathbf{Q}^n)$	Group of Boolean isometries 2.1
$O(\{-1,1\}^n)$	Group of orthogonal transformations of $\{-1,1\}^n$ 2.1
$O(\mathbf{R}^n)$	Real orthogonal group 2.1
o	Column vector whose every coordinate is 0 6.2
$\mathrm{Orb}_{\mathbf{G}}x$	Orbit of $\mathbf{G}$ acting on X containing $x \in X$ 1.3
$\mathrm{Orb}_{\mathbf{G}}S$	Union of orbits $\mathrm{Orb}_{\mathbf{G}}x$ for $x \in S$ 1.3
$\mathrm{Orb}_F x$	Orbit starting at x in a FSDS generated by F 6.1
$\mathrm{Orb}_F S$	Set of orbits starting at some $x \in S$ in a FSDS generated by F 6.1
$\mathrm{Orb}_{F,V} x$	Orbit starting at x in a non-autonomous FSDS generated by F and V 9.2
$\mathrm{Orb}_{F,V} S$	Set of orbits starting at some $x \in S$ in a on-autonomous FSDS generated by F and V 9.1
$\mathrm{PO}(F,V)$	Set of all periodic orbits in the non-autonomous FSDS generated by F and V 9.2
P_L	Projection function: $\mathbf{Q}^M \to \mathbf{Q}^L$ 1.4
p_i	Projection function: $\mathbf{Q}^n \to \mathbf{Q}$ defined by $p_i x = x_i$ 1.4
$\mathbf{Q}$	Minimal Boolean algebra $\{0,1\}$ 1.3, 1.4
$\mathbf{Q}^n$	Set of all functions from $\mathbf{N}$ to $\mathbf{Q}$, i.e. n-bit binary strings $x_1 \cdot x_2 \cdots x_n$ 1.3
$\mathbf{R}^n$	Real n-dimensional space 2.1
RP	Number of non-overlapping runs pairs 7.4
$S_m\cdot$	The disjunction of all conjunctions of m Boolean functions or variables selected from $\{\cdot\}$ 4.1
$\mathrm{SCY}(F)$	Set of all significant cycles 6.3
Sgn	Function: $\mathbf{R}^n \to \{-1,1\}^n$ 2.1

SYM(X)	Symmetric group on set X 1.2
$\mathbf{U}_n$	Multiplicative abelian group 1.2
$U_\epsilon S$	ϵ-neighborhood of a subset S 6.1
$\mathbf{V}$	$ImageofasequenceV1.1$
Var(F)	Variation of transformation F 2.2
X^D	Set of all functions from D to X 1.1
$\mathbf{Z}$	Set of all integers 1.1
$\mathbf{Z}_n$	Residue class ring with n elements $\{0, 1, ..., n-1\}$ 1.2
$\mathbf{Z}_+$	Set of non-negative integers $\{0, 1, 2, ...\}$ 1.1
$\mathbf{Z}^+$	Set of positive integers $\{1, 2, ...\}$ 1.1
ι	Identity permutation 1.2
ρ	Circular permutation (1,2,..,n) 1.2
$\varphi(n)$	Euler's function 1.2
$\omega_F x$	Limit set of x in the FSDS generated by F 6.1
$\omega_F A$	Union of limit sets of some $x \in A$ in the FSDS generated by F 6.1
$\Omega_{F,V} x$	Limit orbit of x in the non-autonomous FSDS generated by F and V 9.2
$\Omega_{F,V} A$	Union of limit orbits of some $x \in A$
	in the FSDS generated by F and V 9.2
$\|X\|$	Number of elements of finite set X 1.1
J^-	Complementation or inversion of coordinates 2.1
j^-	Complementation or inversion of a coordinate 2.1
$\{s, t, .., w\}^-$	Complementation or inversion of coordinates 2.1
$(F_1, ..., F_n)$	Transformation F from $\mathbf{Q}^m$ to $\mathbf{Q}^n$
	such that $F_i = p_i F$ 2.3
$[f_1, ..., f_n]$	[ ]-representation of a self-dual transformation
$\langle \tau, .., \omega \rangle$	A subgroup generated by elements $\tau, .., \omega$
	of a group 1.2
$\langle f \rangle$	Circular self-dual transformation defined by
	$f : \mathbf{Q}^n \to \mathbf{Q}$ such that $p_1 \cdot f = f$ 2.4
	Transformation defined by f in circular second-order DNNs 8.3
$< h^1, h^0 >$	Transformation defined by h^1 and h^0 in a circular
	second-order DNN 8.3
$\langle\langle f \rangle\rangle$	Skew-circular transformation defined by $f : \mathbf{Q}^n \to \mathbf{Q}$
	such that $p_1 \cdot f = f$ 2.4
$\|f\|$	Number of elements of the set $f^{-1}1$ for a function f 1.4
$[x]$	The greatest integer not greater than real number x 1.2
$[x]$	Orb$_{\mathbf{G}} x$ for a given group$\mathbf{G}$ $6.6, 7.1, 7.2, 8.2, 9.5.$
$[S]$	Orb$_{\mathbf{G}} S$ for a given group$\mathbf{G}$ $6.6, 7.1, 7.2, 8.2, 9.5.$
$(s_1, s_2, .., s_m)$	Cyclic permutation 1.2
(x, y)	Inner product of x and y 4.1
X^c	Complement of a subset X 1.1
$F : X \to Y$	F is a function from X to Y 1.1
$A \to_F B$	B is the image of A under F 1.1
$x \to y$	(x, y) is an arc of a digraph 1.1
$x\partial$	(x, x) is a loop of a digraph 1.1

$F \mid A$	Transformation F restricted to A 1.1
$\backslash$	Difference of sets: $A\backslash B = \{x \mid x \in A and x \notin B\}$ 1.1
$+$	Sum of transformations 1.1
$\dot{+}$	Symmetric difference of sets: $A\dot{+}B = (A\backslash B) \cup (B\backslash A)$ 1.1
$\times$	Cartesian product of sets 1.1
	Direct product of transformations 1.1
	Direct product of groups 1.2
$\emptyset$	Empty set 1.1
$\circ$	Composition of functions or transformations 1.1
$\odot$	Disjoint composition (direct sum) of transformations 1.1
$\vee$	Disjunction, OR 1.4
$\cdot$	Conjunction, AND, Product 1.4
$\neg$	Complementation, Negation 1.4
$(=)$	Equality operation on $\mathbf{Q}^n$ or $\mathbf{B}$ 1.4,
$\bar{\neg}$	Complementation, Negation 2.1
$\sim_G$	Equivalence relation with respect to an acting group G 1.3
$\sim_f$	Equivalence relation 4.2
$\sim_F$	Equivalence relation 5.2
$\succeq_f$	Preorder 4.2
$\equiv mod$	$a \equiv b$ mod n means $a - b$ is divisible by n 1.2
%	$a\%b$ is the remainder obtained by dividing a by b 1.2