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Notation

ZF	Zermelo-Fraenkel axiomatic theory	3
ZFC	the theory ZF with the Axiom of Choice	3
$x \in y$, $x = y$	atomic formulas: x is a member of y, x is equal to y	5
$\wedge, \vee, \neg, \rightarrow, \leftrightarrow$	logical connectives: conjunction, disjunction, negation, implication, equivalence	5
$\forall x$, $\exists x$	quantifiers: for all x, there exists x	5
$\{x : \varphi(x, p_1, \ldots, p_n)\}$	the class of all x satisfying $\varphi(x, p_1, \ldots, p_n)$	5
$C = D$	a class C is equal to a class D	5
V	universal class (universe, $\{x : x = x\}$)	6
$C \subset D$	a class C is included in a class D	6
$C \cap D$	the intersection of classes C and D	6
$C \cup D$	the union of classes C and D	6
$C - D$	the difference of classes C and D	6
$\bigcup C$	the union of sets from a class C	6
$\{a, b\}$	the pair	7
$\{a\}$	the singleton	7
(a, b)	the ordered pair	7
$(a_1, \ldots, a_{n+1})$	the ordered $n+1$-tuple	7
$\emptyset$	the empty set	8
$\bigcap C$	the intersection of sets from a class C	8
$\bigcup X$	the union	9
$\{a_1, \ldots, a_n\}$	the set with elements a_1, …, a_n	9
$X \triangle Y$	symmetric difference of X and Y	9
$P(X)$	the power set of X	9
$X \times Y$	the product of X and Y	10
$X_1 \times \ldots \times X_{n+1}$	the product of $n+1$ sets	10
X^n	the power of a set X	10
$\mathrm{dom}(R)$	the domain of a relation R	10
$\mathrm{ran}(R)$	the range of a relation R	10
$\mathrm{field}(R)$	the field of a relation R	10
$y = f(x)$	y is the value of f at x	11
$f : X \rightarrow Y$	f is a function from X to Y	11
Y^X	the set of functions from X to Y	11
$f \restriction X$	the restriction of a function f to a set X	11
$f \circ g$	composition of f and g	11
$f``X$, $f(X)$	the image of a set X by a function f	11
$f_{-1}(X)$	the inverse image of a set X by a function f	11
f^{-1}	the inverse of a function f	11
$F``C$, $F(C)$	the image of a class C by a class function F	12
$[x]$	the equivalence class of x	12
$X/\equiv$	the quotient of X by an equivalence relation $\equiv$	12

$\boldsymbol{N}$	the smallest inductive set	13
0, 1, 2, 3, ...	the natural numbers	13
$(P, <)$	a partially ordered set	17
$\sup X$	the supremum of X	17
$\inf X$	the infimum of X	17
Ord	the class of ordinals	19
$\alpha + 1$	the successor of an ordinal α	20
ω, $\boldsymbol{N}$	the set of finite ordinals (natural numbers)	20
$\langle a_\xi : \xi < \alpha \rangle$	an α-sequence; a (transfinite) sequence of length α	21
$s^\frown x$, sx	the extension of a sequence s by an element x	21
$\langle a_\alpha : \alpha \in Ord \rangle$	a sequence	21
$\lim_{\xi \to \alpha} \gamma_\xi$	the limit of a sequence $\langle \gamma_\xi : \xi < \alpha \rangle$	22
$\alpha + \beta$	the sum of ordinals α and β	23
$\alpha \cdot \beta$	the product of ordinals α and β	23
α^β	the power of an ordinal α by an ordinal β	23
ε_0	the least ordinal α such that $\alpha = \omega^\alpha$	24
$\rho(x)$	the rank of an element x in a well-founded relation E	25
$\lvert X \rvert = \lvert Y \rvert$	sets X, Y have the same cardinality	27
$\lvert X \rvert \leq \lvert Y \rvert$	the cardinality of a set X is less or equal to the cardinality of a set Y (there exists a one-to-one mapping of X into Y)	27
$\kappa + \lambda$	the sum of cardinals κ and λ	28
$\kappa \cdot \lambda$	the product of cardinals κ and λ	28
κ^λ	the power of a cardinal κ by a cardinal λ	28
χ_X	the characteristic function of a subset X of a given set	28
$\lvert W \rvert$	the cardinal of a well-ordered set W	29
α^+	the cardinal successor of an ordinal α	29
$h(X)$	Hartogs function	29
$\aleph_\alpha$	the αth infinite cardinal	30
ω_α	the αth infinite order-type of a well-ordered set	30
Γ	the canonical well-ordering of Ord^2	30
$\operatorname{cf} \alpha$	the cofinality of an ordinal α	31
$\boldsymbol{R}$	the set of real numbers	37
$\mathfrak{c}$	the cardinality of the continuum (continuum)	37
$\boldsymbol{Q}$	the set of rational numbers	37
$\boldsymbol{C}$	the Cantor set	37
CH	the Continuum Hypothesis	37
G_δ, F_σ	G_δ sets, F_σ sets	42
$\mathcal{N}$	the Baire space (ω^ω)	42
$O(s)$	a basic clopen set in the Baire space	42
Seq	the set of finite sequences of natural numbers	43
$[T]$	the set of infinite paths through a tree T	43
AC	the Axiom of Choice	47
DC	the Principle of Dependent Choices	50
$[A]^\lambda$	the set of subsets of A of cardinality λ	51
$[A]^{<\kappa}$, $P_\kappa(A)$	the set of subsets of A of cardinality less than κ	52
$\sum_{i \in I} \kappa_i$	the sum of cardinal numbers κ_i, $i \in I$	52
$\prod_{i \in I} X_i$	the product of sets X_i, $i \in I$	53
$\prod_{i \in I} \kappa_i$	the product of cardinal numbers κ_i, $i \in I$	53
GCH	the Generalized Continuum Hypothesis	55
$\beth_\alpha$	the beth function	55
$\gimel(\kappa)$	the gimel function ($\kappa^{\operatorname{cf} \kappa}$)	56
SCH	the Singular Cardinal Hypothesis	58
TC(S)	the transitive closure of a set S	64

$Form$	the set of all formulas of the language $\{\in\}$	162
$\ulcorner\varphi\urcorner$	the set coding a formula φ ($\ulcorner\varphi\urcorner \in Form$)	162
$\#\sigma$	the Gödel number of a sentence σ	162
$T(x)$	the truth definition	162
H_κ	the set of all x with $\lvert \mathrm{TC}(X)\rvert < \kappa$	171
$\mathrm{def}(M)$	the set of subsets of M definable over $(M, \in)$	175
L_α, L	the hierarchy of constructible sets	175
$G_1, \ldots, G_{10}$	Gödel operations	178
$\mathrm{cl}(M)$	the closure of a set M under Gödel operations $G_1, \ldots, G_{10}$	181
C^M	the class $\{x : \varphi^M(x)\}$ where $C = \{x : \varphi(x)\}$	182
F^M	the operation F defined in a class M	182
c^M	the constant c defined in a class M	182
Σ_n, Π_n, Δ_n	the hierarchy of properties, classes, relations, and functions	183
$\vDash_n$, $\vDash_n^M$	the satisfaction relation restricted to Σ_n formulas	186
$M \prec_{\Sigma_n} N$	M is a Σ_n-elementary submodel of N	187
$<^n_{\alpha+1}$	the end-extensions of canonical well-orderings of the subsets W_n^α of $L_{\alpha+1}$	189
$<_{\alpha+1}$	the canonical well-ordering of $L_{\alpha+1}$	189
$<_L$	the canonical well-ordering of L	190
$\diamondsuit$	the Diamond Principle	191
$\mathrm{def}_A(M)$	the set of subsets of M definable over $(M, \in, A \cap M)$	192
$L_\alpha[A]$, $L[A]$	the hierarchy of sets constructible from a set A	192
$L(\boldsymbol{R})$	the smallest inner model that contains all reals	193
$L_\alpha(A)$, $L(A)$	the hierarchy of sets constructible from elements of the transitive closure of a set A	193
OD	the class of ordinal-definable sets	194
HOD	the class of hereditarily ordinal-definable sets	194
$OD[A]$	the class of ordinal-definable sets from A	195
$HOD[A]$	the class of hereditarily ordinal-definable sets from A	195
$OD(A)$	the class of ordinal-definable sets over A	195
$HOD(A)$	the class of hereditarily ordinal-definable sets over A	196
ZF^-	Zermelo-Fraenkel set theory without the Power Set Axiom	198
$L[A]$	the class of sets constructible from a class A	199
$M[X]$	the least model of ZF such that $M \subset M[X]$ and $X \in M[X]$	199
$\dot{a}$	a name of a set from $V[G]$	203
$x \sim y$	the set of conditions compatible with x in a forcing notion is the same as that for y	205
$Q = P/\!\sim$	Q is the separative quotient of P	205
$e : P \to B(P)$	the Boolean completion of a partially ordered set P	206
$\lVert x = y\rVert$, $\lVert x \in y\rVert$	Boolean functions in a Boolean universe, the Boolean values of $x = y$ and $x \in y$	206
$\lVert\varphi\rVert$	the Boolean value of a formula in a Boolean-valued model	207
V^B	the Boolean-valued model	209
$\rho(x)$	the rank function in V^B	209
$u \Rightarrow v$	$-u + v$	209
$\lVert x \in y\rVert$, $\lVert x \subset y\rVert$, $\lVert x = y\rVert$	the Boolean values of atomic formulas in V^B	209
$\check{x}$	the canonical name for a set in the ground model	211
$\check{x}$	the canonical name for a set in the ground model	212
$\dot{G}$	the canonical name for generic ultrafilter	214
M^B	the Boolean-valued model inside a transitive model M	214
M^P	the class of P-names, $M^P = M^{B(P)}$	215
$\Vdash$, $\Vdash_P$	the forcing relation	215
$p \Vdash \varphi$	p forces φ	215

j, j_U	an elementary embedding of V in Ult	285
$\mathrm{ext}(f)$	the extension of the equivalence class $[f]$, $\{[g] : g \in^* f\}$	286
$M(X)$	the Mahlo operation for a class X, $M(X) = \{\alpha : X \cap \alpha$ is stationary in $\alpha\}$	290
$\mathcal{L}_{\kappa,\omega}$	a language with κ variables, and infinitary connectives $\bigvee_{\xi<\alpha}$, $\bigwedge_{\xi<\alpha}$, for $\alpha < \kappa$	293
$\mathcal{L}_{\kappa,\kappa}$	a language with κ variables, infinitary connectives $\bigvee_{\xi<\alpha}$, $\bigwedge_{\xi<\alpha}$, and infinitary quantifiers $\exists_{\xi<\alpha} v_\xi$, $\forall_{\xi<\alpha} v_\xi$ for $\alpha < \kappa$	293
c^φ_ξ, $\xi < \alpha$	Skolem constants	293
$\exists_{\xi<\alpha} v_\xi\, \varphi(v_\xi, \ldots)_{\xi<\alpha} \to \varphi(c^\varphi_\xi, \ldots)_{\xi<\alpha}$	a Skolem sentence for a formula φ in an $\mathcal{L}_{\kappa,\kappa}$ language	294
Π^n_m, Σ^n_m	the hierarchy of higher order formulas	295
$h_\varphi(x_1, \ldots, x_n)$	a definable Skolem function for a formula $\varphi(u, v_1, \ldots, v_n)$	300
$0^\sharp$	zero-sharp, $0^\sharp = \{\varphi : L_{\aleph_\omega} \vDash \varphi[\aleph_1, \ldots, \aleph_n]\}$	312
$h_\varphi(v_1, \ldots, v_n)$	the canonical Skolem function for $\varphi(u, v_1, \ldots, v_n)$	313
$H^{\mathfrak{A}}(X)$	the Skolem hull of X	314
$\Sigma(\mathfrak{A}, I)$	the set of all formulas $\varphi(v_1, \ldots, v_n)$ true in $\mathfrak{A}$ for increasing sequences of elements of a set of indiscernibles I	314
$\mathrm{Ult} = \mathrm{Ult}_D(M)$	the ultraproduct of M by an M-ultrafilter D	324
$x^\sharp$	x-sharp, $x^\sharp = \{\varphi : (L_{\aleph_\omega}[x], \in, x) \vDash \varphi[\aleph_1, \ldots, \aleph_n]\}$, for $x \subset \omega$	328
$H^\delta(\alpha \cup p)$	the Skolem hull of $\alpha \cup p$ in $(L_\delta, \in)$	331
$H^\rho_n(Z)$	the Σ_n Skolem hull of a set Z in $(L_\rho, \in)$	333
$\{(\mathrm{Ult}^{(\alpha)}, E^{(\alpha)}), i_{\alpha,\beta} : \alpha, \beta \in Ord\}$, $\mathrm{Ult}^{(\alpha)}_U(V)$	the iterated ultrapowers	342
$U^{(\alpha)}$	the $\kappa^{(\alpha)}$-complete ultrafilter on $\kappa^{(\alpha)}$, $U^{(\alpha)} = i_{0,\alpha}(U)$	342
$\kappa^{(\alpha)}$	the measurable cardinal in $\mathrm{Ult}^{(\alpha)}$, $\kappa^{(\alpha)} = i_{0,\alpha}(\kappa)$	344
U_n	the product ultrafilters, $U_1 = U$, $U_{n+1} = \{X \subset \kappa^{n+1} : \{\alpha : \{\langle\alpha_1, \ldots, \alpha_n\rangle : \langle\alpha, \alpha_1, \ldots, \alpha_n\rangle \in X\} \in U_n\} \in U\}$	345
U_E	the ultrafilter induced by U_n via the order isomorphism between $n = \lvert E\rvert$ and E	346
$\mathrm{in}_{E,S}(X)$	the inclusion map, $\mathrm{in}_{E,S}(X) = \{t \in \kappa^S : t{\restriction}E \in X\}$ for $X \subset \kappa^E$	346
$(B_\alpha, \subset)$	the Boolean algebra of sets $Z \subset \kappa^\alpha$ having a finite support, i.e., $Z = \mathrm{in}_{E,\alpha}(X)$ for some $X \subset \kappa^E$ with finite $E \subset \alpha$	347
$0^\dagger$	zero-dagger	353
$\langle M_\gamma : \gamma \le \lambda\rangle$	the iterated ultrapower of an inner model M	356
$o(U)$	the order of a normal measure U (the rank of U in the Mitchell order)	358
$o(\kappa)$	the order of a cardinal κ (height of the Mitchell order)	358
$U <_{\mathcal{U}} W$	$\mathcal{U}$ is a closed set of normal measures, $U, W \in \mathcal{U}$, and $U \in j_W(\mathcal{U})$	358
$o^{\mathcal{U}}(U)$	the order of $U \in \mathcal{U}$ in $<^{\mathcal{U}}$	358
$o^{\mathcal{U}}(\kappa)$	the order of a cardinal κ in $<^{\mathcal{U}}$	358
$l(\mathcal{U})$	the length of a set of normal measures $\mathcal{U}$	359
$L\langle A_\alpha : \alpha < \theta\rangle$	the model $L[A]$ where $A = \{(\alpha, X) : X \in A_\alpha\}$	360
$L[\mathcal{U}]$	the model $L\langle U_{\alpha,\beta} : \alpha, \beta\rangle$ where $\mathcal{U} = \{U_{\alpha,\beta} : \alpha, \beta\}$	360
$\hat{x}$	$\{y \in P_\kappa(A) : x \subset y\}$	365
Ult^-, $\mathrm{Ult}^-_U(V)$	the version of ultrapower considering only functions on λ^+ that assume at most λ values; U is an ultrafilter on λ^+ for a cardinal λ	367
$[f]^-$	the element of the transitive collapse of $\mathrm{Ult}^-(V)$ represented by the function f	367
κ_x, λ_x	$\kappa_x = x \cap \kappa$ and $\lambda_x =$ the order-type of x, for $x \in P_\kappa(\lambda)$	374

ρ_α^n	the Σ_n-projectum of α, i.e., the least $\rho \leq \alpha$ such that there is a $\Sigma_n(J_\alpha)$ function such that $f\text{“}J_\rho = J_\alpha$	549
$p\restriction s$	the tree $\{t \in p : t \subset s \text{ or } t \supset s\}$ for a tree p and $s \in p$	557
$\mathcal{F}(T)$	the fusion $\bigcap_{n=0}^\infty \bigcup_{s\in\{0,1\}^n} T(s)$ for a fusionable collection of perfect trees $T = \{T(s) : s \in Seq(\{0,1\})\}$	558
T'	the tree $\{t \in T : t$ has $\aleph_2$ extensions in $T\}$ where $T \subset \omega_2^{<\omega}$ is a tree	561
$h_T(t)$	the least α such that $t \notin T_{\alpha+1}$ where T_α is defined by induction: $T_0 = T$, $T_{\alpha+1} = T'_\alpha$, and $T_\alpha = \bigcap_{\beta<\alpha} T_\beta$ if α is limit	561
s_p	the stem of a Laver tree p	565
$S^p(t)$	the set $\{a \in \omega : t^\frown a \in p\}$ where p is a Laver tree and $t \in p$	565
s_i^p, $i = 0, 1, \ldots$	a canonical enumeration of nodes in a Laver tree p	565
$q \leq_n p$	$q \leq p$ and $s_i^p \in q$ for all $i = 0, \ldots, n$ where p, q are Laver trees	565
$U + V$	the ultrafilter $\{X \subset \boldsymbol{N} : \{m \in \boldsymbol{N} : X - m \in V\} \in U\}$ where $X - m = \{n : m + n \in X\}$ and U, V are ultrafilters on $\boldsymbol{N}$	573
$\beta\boldsymbol{N}$	the Stone-Čech compactification of $\boldsymbol{N}$	573
A^*	the clopen set $\{V \in \beta\boldsymbol{N} : A \in V\}$ in $\beta\boldsymbol{N}$ for $A \subset \boldsymbol{N}$	574
OCA	the Open Coloring Axiom	576
$I \times J$	the ideal of sets $X \subset S \times T$ such that $\{x \in S : \{y \in T : (x, y) \in X\} \notin J\} \in I$ where I and J are ideals on S and T, respectively	580
$\boldsymbol{C}_\kappa$	the complete Boolean algebra of the forcing for adding κ Cohen reals	588
$\overline{B}$	the completion of a Boolean algebra B	588
$A \leq_{\text{reg}} B$	A is a regular subalgebra of a Boolean algebra B	588
$\text{pr}^A(b)$, $\text{pr}_A(b)$	the projections of b to a subalgebra A	589
$\langle X\rangle$	the subalgebra generated by a set X	589
$A(b_1, \ldots, b_n)$	the subalgebra generated by the set $A \cup \{b_1, \ldots, b_n\}$ where A is a subalgebra	589
P_S, $\boldsymbol{C}_S$	$\boldsymbol{C}_S = B(P_S)$ and P_S is the forcing consisting of finite 0–1 functions with domain $\subset S$	589
Fr_G	the free Boolean algebra with a set G of free generators	590
$\limsup_n a_n$	$\prod_{n=0}^\infty \sum_{k\geq n} a_n$ (a Boolean operation)	598
$\liminf_n a_n$	$\sum_{n=0}^\infty \prod_{k\geq n} a_n$ (a Boolean operation)	598
$\lim_n a_n$	the common value of $\limsup_n a_n$ and $\liminf_n a_n$ provided that they are equal	598
$M[G]$	$\{\dot{x}^G : \dot{x} \in M\}$ where $M \prec H_\lambda$ and G is V-generic	605
PFA	the Proper Forcing Axiom	607
$T\restriction C$	the tree $\{t \in T : o(t) \in C\}$ where T is an ω_1-tree and $C \subset \omega_1$ is a closed unbounded set	612
PFA^+	if $\mathcal{D} = \{D_\alpha : \alpha < \omega_1\}$ are dense subsets of a proper forcing P and if $\Vdash \dot{S} \subset \omega_1$ is stationary, then there exists a $\mathcal{D}$-generic filter G such that $\dot{S}^G$ is stationary	613
PFA^-	if P is proper such that $\lvert P\rvert \leq \aleph_1$ and if $\mathcal{D} = \{D_\alpha : \alpha < \omega_1\}$ are dense then there exists a $\mathcal{D}$-generic filter	614
G_A	the game of players I and II in which the players choose the consecutive members of a sequence of natural numbers $\langle a_0, b_0, a_1, b_1, \ldots\rangle$; I wins if the sequence is in the set $A \subset \omega^\omega$ and otherwise II wins	627
AD	the Axiom of Determinacy	627

$\sigma * b$	a play played by player I by a strategy σ in the game G_A	627
$a * \tau$	a play played by player II by a strategy τ in the game G_A	627
PD	the Projective Determinacy	628
$\mathrm{AD}^{L(\boldsymbol{R})}$	the Axiom of Determinacy in $L(\boldsymbol{R})$	628
$\mathrm{cone}(x_0)$	the cone $\{x \in \mathcal{N} : x_0 \in L[x]\}$	633
$\boldsymbol{\delta}^1_n$	$\sup\{\xi : \xi$ is the length of a $\boldsymbol{\Delta}^1_n$ prewellordering of $\mathcal{N}\}$ (the projective ordinal)	636
Θ	$\sup\{\xi : \xi$ is the length of a prewellordering of $\mathcal{N}\}$	636
$G_A^{\langle a_0,b_0,\ldots,a_n,b_n\rangle}$	the game in which player I plays $\langle a_{n+1}, a_{n+2}\ldots\rangle$, player II plays $\langle b_{n+1}, b_{n+2}\ldots\rangle$, and in which II wins when $\langle a_0, b_0, a_1, b_1, \ldots\rangle \in A$	637
$G_A^{a_0}$	the game in which II makes a first move b_0, then I plays a_1, etc., and II wins if $\langle a_0, b_0, a_1, b_1, \ldots\rangle \in \mathcal{N} - A$	637
$\preccurlyeq$	the linear ordering of *Seq* that extends the partial ordering $\supset$	638
T_s	$\{t \in Seq : (u,t) \in T$ for some $u \subset s\}$ where $T \subset Seq_2$ is a tree and $s \in Seq$	638
K_s	the set $\{t_0, \ldots, t_{n-1}\} \cap T_s$ where $\lvert s\rvert = 2n$, $\{t_n : n \in \omega\}$ is an enumeration of *Seq* and $T \subset Seq_2$ is a tree	638
k_s	the size of the finite set K_s	638
T_s	the set $\{t \in Seq : (s,t) \in T$ for some $s \in Seq\}$ and a tree T on $\omega^{\tau} \times K$	642
μ_s, $s \in Seq$	the measures on T_s's ensuring that the tree T on $\omega \times K$ is homogeneous	642
$\mu_{s,t}$	the natural projection map from T_t to T_s for $s \subset t$ in *Seq*	642
Q, $Q_{<\kappa}$	the stationary tower forcing	653
$f =_G g$, $f \in_G g$	the predicates in the generic ultrapower by the stationary tower forcing	653
K	the core model up to a measurable cardinal	660
$\mathrm{rud}_A(M)$	the closure of $M \cup \{M\}$ under functions rudimentary in A	660
J^A_α, $\alpha \in Ord$	the relativized Jensen hierarchy of sets	660
$\mathcal{C}_\lambda$	the closed unbounded filter on λ	661
$M < M'$	the well-ordering of mice	662
K^m	the core model up to $o(\kappa) = \kappa^{++}$	664
K^{strong}	the core model up to a strong cardinal	666
ρ^1_M	the Σ_1-projectum of M	667
$\mathrm{MS} = \bigcup_{n=0}^{\infty} \mathrm{MS}_n$	the class of all measure sequences	676
R_U	the Radin forcing for a measure sequence U	677
MM	Martin's Maximum	681
SPFA	Semiproper Forcing Axiom	681
RCS	revised countable support iteration	682
$X^{\perp}$	$X^{\perp} = \{M \in [H_\lambda]^\omega : M \prec H_\lambda$ and $N \notin X$ for every countable N that satisfies $M \prec N \prec H_\lambda$ and $N \cap \omega_1 = M \cap \omega_1\}$	684
RP, $\mathrm{RP}(\lambda)$	the Reflection Principle	688
SRP, $\mathrm{SRP}(\lambda)$	the Strong Reflection Principle	688
IA	the set of all internally approachable models	699
$\square_{\kappa,\nu}$, $\square_{\kappa,<\nu}$	weaker square principles	702
$\square_{\kappa,\kappa}$, $\square^*_\kappa$	the Weak Square	702
F^1_n	the Π^1_n filter	703
$\mathrm{AD}_{\boldsymbol{R}}$	the determinacy of games where moves are real numbers	705

Name Index

Index

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This series publishes advanced monographs giving well-written presentations of the "state-of-the-art" in fields of mathematical research that have acquired the maturity needed for such a treatment. They are sufficiently self-contained to be accessible to more than just the intimate specialists of the subject, and sufficiently comprehensive to remain valuable references for many years. Besides the current state of knowledge in its field, an SMM volume should also describe its relevance to and interaction with neighbouring fields of mathematics, and give pointers to future directions of research.

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