

# Index of Notation

## Chapter I

$\mathcal{S}(a)$	the successor of $a = a \cup \{a\}$	13
$1st(x), 2nd(x)$	the first and second coordinates of $x$	14
$\varphi^{(w)}$	$\varphi$ relativized to $w$	15
$TC(a)$	transitive closure of $a$	24
$sp(a)$	support of $a$	29
$clpse(b)$	the collapse of $b$	31
$\subseteq_{end}$	end extension relation	34

## Chapter II

$\mathbb{V}_M$	the universe of sets on $M$	42
$\mathbb{A}, \mathbb{B}$	typical admissible sets	43
$o(\mathbb{A})$	the least ordinal not in $\mathbb{A}$	45
$\text{HF}_{\mathfrak{M}}$	hereditarily finite sets on $\mathfrak{M}$	46
$H(\kappa)_{\mathfrak{M}}$	$\{a \in \mathbb{V}_M \mid \text{Card}(TC(a)) < \kappa\}$	52
$\mathcal{F}_1, \dots, \mathcal{F}_N$	Gödel's operations plus some	58, 68
$\mathcal{D}(b)$	$b \cup \{\mathcal{F}_i(x, y) \mid x, y \in b, 1 \leq i \leq N\}$	58
$L(a, \alpha)$	sets constructed from $a$ by stage $\alpha$	58
$\text{HYP}_{\mathfrak{M}}$	smallest admissible above $\mathfrak{M}$	60
$O(\mathfrak{M})$	the ordinal of $\mathfrak{M}$	60
$\mathcal{W}f$	well founded part	73

## Chapter III

$\text{sub}(\varphi)$	subformulas of $\varphi$	81
$\models_{\mathfrak{M}}$	true in all $\mathfrak{M}$ -structures	88
$\vdash_{\mathfrak{M}}$	provable using $\mathfrak{M}$ -rule	89
$L_{\infty \omega}$	class of proper infinitary formulas	81
$L_{\mathbb{A}}$	$L_{\infty \omega} \cap \mathbb{A}$	97
$L_{\omega_1 \omega}$	union of countable $L_{\mathbb{A}}$	127

## Chapter IV

$\text{HYP}(\mathbb{A})$	smallest admissible $\mathbb{B}$ with $\mathbb{A} \in \mathbb{B}$	115
--------------------------	---	-----

## $\Pi_1^1, \Sigma_1^1$

universal and existential second order 116

## $\Delta_1^1$

both  $\Pi_1^1$  and  $\Sigma_1^1$  116

## Chapter V

### $\Sigma\text{-Sat}_n$

satisfaction for  $n$ -ary  $\Sigma$  formulas 155

### $\rho^<, \rho(<)$ $<_L$

rank functions 161  
the canonical well ordering of  $L$  162

### $\omega_1^c$

least nonrecursive ordinal 173

### $\tau_\beta$

$\beta^{\text{th}}$  admissible ordinal 174

### $\alpha^*$

projection of  $\alpha$  174

### $\sigma_\beta$

$\beta^{\text{th}}$  stable ordinal 178

### $<_1$

$\Sigma_1$  submodel relation 177

### $\Sigma_2^1, \Pi_2^1, \Delta_2^1$

second order quantifier forms 189

## Chapter VI

### $\Gamma, \Gamma_\varphi$

inductive definitions 197, 200

### $I_\Gamma, I_\varphi$

smallest fixed point 198, 200

### $\|\Gamma\|$

closure ordinal of  $\Gamma$  200

### $\Sigma_+$

$R$ -positive  $\Sigma$  formulas 205

### $\kappa^{\mathfrak{M}}$

Moschovakis closure ordinal of  $\mathfrak{M}$  231

## Chapter VII

### $F_{\exists \times \varphi}$

Skolem function symbol 263

### $T_{\text{Skolem}}$

Skolem theory 263

### $<(\mathbb{L}_{\mathbb{A}})$

elementary submodel for  $\mathbb{L}_{\mathbb{A}}$  268

### $h_{\mathbb{Z}}(\mathbb{A}), h(\mathbb{A})$

least ordinals not pinned down 271

### $\beth_x(\kappa)$

$\text{Card}(V_x(M))$  if  $\text{Card}(M) = \kappa$  276

### $[X]^n$

$n$ -element subsets of  $X$  282

### $\cong_p$

partially isomorphic 292