

dominant 1

th. (wood) let λ be a lin of wood
cardinals, and let $\mathcal{C} = \text{Con}(\omega, <\lambda) \text{gr.} / \mathcal{V}$.

$$\mathbb{R}^* = \bigcup_{\alpha < \lambda} \mathbb{R}_\alpha \vee [\mathcal{C} \Gamma_\alpha]$$

$$\Gamma_\alpha = \{ A \in \mathcal{P}(\mathbb{R})^{\mathcal{V}[\mathcal{C} \Gamma_\alpha]} : \mathcal{V}[\mathcal{C} \Gamma_\alpha] \models \text{"A is } <\lambda\text{-universal bar"} \}$$

$$\Gamma^* = \{ A^* \subset \mathbb{R}^* : \exists \alpha < \lambda \ A \in \Gamma_\alpha \}$$

union of unions,
of A in $\mathcal{V}[\mathcal{C} \Gamma_\beta]$, $\alpha \leq \beta < \lambda$.

then $L(\mathbb{R}^*, \Gamma^*) \models \text{ZF} + \text{AD}^+$

let M be a cth. ω_1+1 thron premom
(by Σ). say $M \models$ " λ is a lin of
woods." (cf (λ) not work in M)

let $(x_n : n < \omega) = \mathbb{R}^{\mathcal{V}}$ (in $\mathcal{V}^{\text{Con}(\omega, \mathbb{R})}$)

Let $(\delta_n : n < \omega)$ be s.t. $\sup_n \delta_n = \lambda$,
 each δ_n is wood in M .

build $\bar{I} = (M_n, \pi_{mn} : m \leq n < \omega)$
 s.t.

π_{mn} reals to a node dropping it, tree
 in V on M_m lying in $(\pi_{0m}(\delta_{n-1}), \pi_{0m}(\delta_n))$

$g_n \subset \text{Cn}(\omega, \pi_{0n+1}(\delta_n)) \text{ gen. } / M_{n+1}$,

$x_n \in M_{n+1} [g_n]$.

$M_\omega = \text{dir. lim } (M_n, \pi_{mn} : m \leq n < \omega)$.

$g = \bigcup_n g_n \subset \text{Cn}(\omega, < \pi_{0\omega}(\lambda)) \text{ gen. } / M_\omega$.

$D^{\bar{I}}(M, \lambda) = L(\mathbb{R}^V, \prod_g^{\pi(\lambda), M_\omega [g]}$ as def given by wood's th.)

$D^{\bar{I}}(M, \lambda) \models "AD^+ + 2F + \mathbb{R}^{D^{\bar{I}}(M, \lambda)} = \mathbb{R}^V"$

don't know that $D^{\bar{I}}(M, \lambda) \in V$.

forcing TP :

$$P = (M_n^P, I_n^P, \dot{d}_n^P, g_n^P : m \leq n < \text{lh}(P))$$

$$\pi_m^P = \dots,$$

$M^P = \text{lan model}$

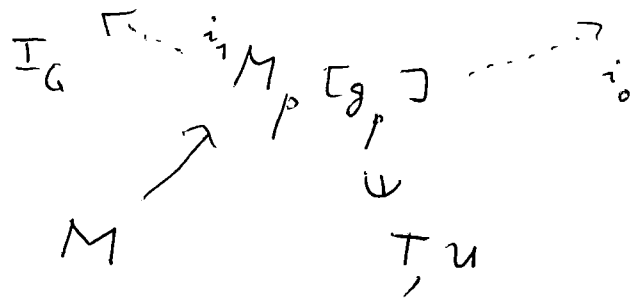
$$\pi_j^P = \dots,$$

ordered by end-extension.

if $G \subset TP$, the I_G generally dense,
can we have that $\Gamma^{I_G, \lambda}$ be
independent for G .

lem. (steel) if M is sord + has a
good ihm strategy, then $\Gamma^{I_G, \lambda} \in V$
 $\forall G$.

proof (idea) :



$$x \in p[i_1(\tau)] \quad x \in p[i_0(u)]$$

may compare $i_1(M_p), i_0(M_p)$ back together into one model. gives \Downarrow .

so $\Gamma_{G,\lambda} \subset V$.

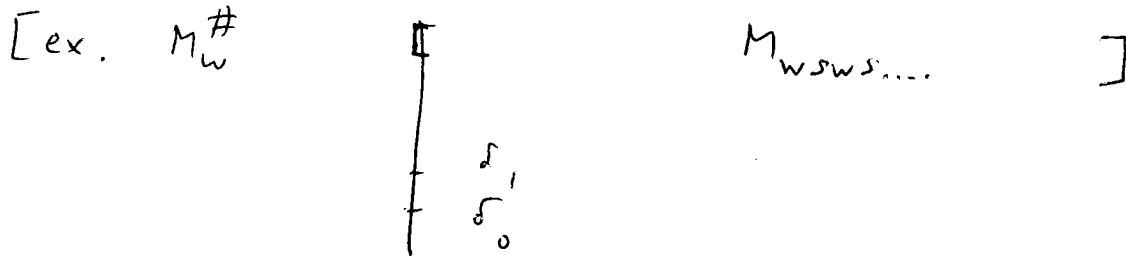
def. a cth. pm M is a sharp premonition

if $M = (M; \epsilon, \vec{E}, F)$, and

$$\text{cut}(F) \text{ is } = \min \{ \alpha : \exists E \in \vec{E} \cap F \quad [\alpha = \text{cut}(E) \wedge M \Vdash \alpha \Vdash \varphi] \}$$

wh φ is a statement in the language of passive premonition.

Let M be a premouse, $a \in M$, $\kappa < M \cap \mathcal{O}R$.



Let $\mathbb{L}_\kappa^M(a)$ be the local K^c closure.

with ± 1 certificates for the M -sequence + crit. $> \kappa$ over a .

def. a sharp premouse M rebuilds itself below λ iff f.a. non-dropping initials

$$i: M \rightarrow N, \quad \forall \kappa < i(\lambda)$$

$$\text{we have } \mathbb{C} \left(\mathbb{L}_\kappa^w \right)^\# = M.$$

M_{ref} = least w -proj. sound active mouse with a limit of wood's $\pm < \lambda$ -shps and $\kappa < \lambda$ which reflects the set $\mathcal{I} < \lambda$ strings.

th. (steel) in M be w -proj. sound

sharp mouse in a good $w, +1$ thru

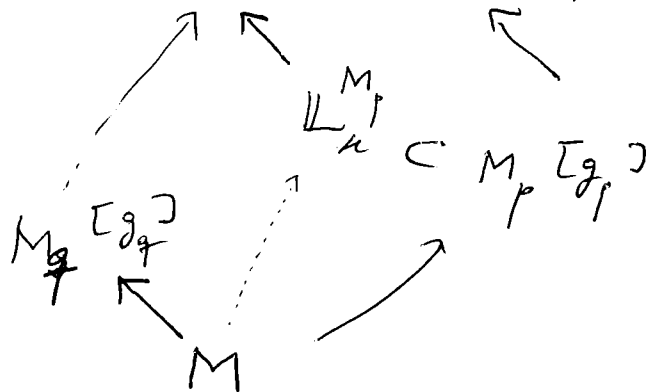
sketch, $\lambda \in M$ a li z

M -woods when records itself below λ .

then $D^{I_G(M; \lambda)}$ does not depend on G .

$$\sigma'' \mathcal{E}_s(\alpha) \subset \sigma(\mathcal{E}_s(\alpha)) \xrightarrow{\mathcal{L}^{M_j''}} \bigcap$$

py. :: sketch : $\mathbb{L}^* \dashrightarrow M_{p'}[g_{p'}] \rightarrow M_{p''}[g_{p''}]$



T, u
}^n

$g_{p''}$ codes
 $\sigma''(\mathcal{E}_s(\alpha) : s \in \langle w \rangle)$
 $\}$

$(\mathcal{E}_s(\alpha) : s \in \langle w \rangle)$ exclude normal for T^*, u^*

↑
 add. of
 excludes involved

let $\mathcal{L}(L(\mathbb{R}, \mathbb{R}) \models AD^+$.

define $(\theta_\alpha : \alpha < \beta)$ s.t.

$$\theta_0 = \sup \{ \gamma : \exists f \in OD \text{ onto } \gamma : \mathbb{R} \rightarrow \gamma \}$$

$$\theta_{\alpha+1} = \sup \{ \gamma : \exists OD_A f : \mathbb{R} \rightarrow \gamma \text{ onto } \}$$

$$\theta_\alpha < \theta, \quad \|A\|_w = \theta_\alpha.$$

$$\theta_\lambda = \sup_{\alpha < \lambda} \theta_\alpha \text{ if } \lambda \text{ is a li}$$

th. (woods, steel : $\textcircled{3}$ left to right)

$$\textcircled{1} \quad C_m(ZF + AD^+ + \theta = \theta_0) \iff$$

$$C_m(ZFC + \exists \lambda \lambda \text{ a li of woods})$$

$$\textcircled{2} \quad C_m(ZF + AD^+ + \theta = \theta_1)$$

$$\iff C_m(ZFC + \exists \lambda \lambda \text{ a li of woods} + \kappa < \lambda \text{ is } < \lambda\text{-wp})$$

$$\textcircled{3} \quad C_m(ZF + \theta AD^+ + \theta = \theta_w) \iff$$

$$C_m(ZFC + \exists \lambda \text{ li of woods} + < \lambda\text{-wp})$$

lem. Let Σ^{\vee} be a (λ, λ) -strategy

s.t. for some $\alpha < \lambda$,

Σ extends uniquely to a $< \lambda$ -u.b.

strategy on $M_{\text{Co}(w, \alpha)}$.

then f.a. $a \in M \parallel \lambda$,

$$L_p^{\Sigma, \mathcal{D}(M, \lambda)}(a) = \mathbb{F}_{\text{rank}(a)}^{M, \Sigma}(a) \parallel a + \mathbb{F}_{\text{rank}(a)}^{M, \Sigma}$$

$\mathcal{M} \cdot$ "C" maximality.

" \supset " $M \triangleleft \mathbb{F}^{M, \Sigma}(a)$, proj. to a .