

TM

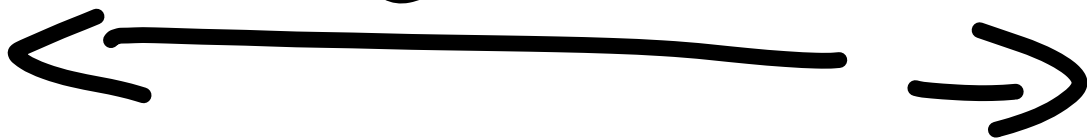
INDISCIDIBILITÀ

CONTEXT-FREE

PL \rightarrow NON-REG.

$$w = x y z$$
$$y^i, i \geq 0$$

10010



01001

NON.
PAL

1001 → PAL

x y z ↘

1^p 0^q p, q >

1100 ↘

same

684412

$$y^i w = x y z$$
$$1 \geq 0$$

$$x y^1 z$$

$$y \neq \varepsilon$$

$$\begin{array}{l} x = \\ y = \\ z = \end{array} \left\{ \begin{array}{l} 101 \\ 001 \end{array} \right. \quad \bar{1} = 2$$

↑
vokua

$$w = 1^k 0^p 1^q$$

$$xy^1z = xy^2z$$

$$p, k \geq 0$$

$$1^k 0^2 1^q$$

$$[1^{2k} 0^2]$$

$$k \geq p$$

$$k=1 \rightarrow 1001$$

$$\text{NON RSC} \xleftarrow{p_A} \uparrow$$

$$L_2 = \{v v v v v\}$$

$$v \in \{0, 1\}^*$$

L_2 mon reg

$$w = x y^i z$$

$$[1001] \xrightarrow{\text{mon reg}} [107]$$

$$x y^1 z$$

$$x y^0 z$$

$$W = xy^1z$$

$$x = 1^p$$

$$y = 0^q \quad p, q, k \geq 0$$

$$z = 1^k$$

$$xy^1z \rightarrow xy^0z$$

$$1^p 1^k$$

$$\# = n$$

ACORR

$$\# 1 > \# 0$$



NON RGB

DIMOSTRA

CHE L È CF

FNC \Rightarrow CHOMSKY

\Rightarrow GRAMM SIA
NON AMBIGUA

\rightarrow FINISCE
"DA QUALCHES
PARTE"

(F)

↓ PDA

[PUOI USARE PDA
PER MOSTRARE
CPI]

DEHASH

NO $\# \in W$

[$\# A \# \Rightarrow A$]

$G' \rightarrow FNC$

G' con

$S' = S$ (SOLSSA
VAR

$G = G' \quad \forall \text{ regble}$
(INIZIALI)

$A \# \#$

REGOLE DERIVAZ

$S \rightarrow AB$

$A \rightarrow Q$

$B \rightarrow$

$\left[\begin{array}{l} Q \\ QQ \\ QQA \end{array} \right]$

$\rightarrow \varepsilon$ (INPUT) (OUTPUT)

$\forall V \in G$

$\rightarrow \text{REGOLAS } G = \text{REGOLAS } G'$

$\rightarrow V = \text{VARIABLES}$

$V' \rightarrow V$
 $V' \rightarrow \varepsilon$

V'

CFG

$S \rightarrow V'$

$V' \rightarrow AB$

$V' \rightarrow A$

$V' \rightarrow B$

$\#$

$V' \rightarrow \epsilon$

$S \rightarrow$

QA

QA

$(A \rightarrow b) \cup$

ab
 abb
 $abbb$
 \cdot

$\left[\begin{array}{l} S \rightarrow A \\ A \rightarrow BC \\ C \rightarrow \epsilon \end{array} \right]$

A
 \swarrow
 BC
 \swarrow
 B

$1e6$

$G \rightarrow S$	S
$S \rightarrow AB$	AB
$B \rightarrow \#$	$A\#$
$\# \rightarrow \underline{\epsilon}$	

(REG UNIT)
FINALS

$G \rightarrow \nu, \pi, \delta$
 LS
 $REGOL$

\rightarrow non sig

$M \approx \exists w \mid$

$[202,3]$

(\leq_m)

$A_{TM} =$

$\langle M, w \rangle \mid M, TM$

the center w

$$- \frac{A_{\top n}}{A_{\top n}} / \overline{A_{\top n}}$$

$$A_{\top n} \leq n \text{ PR}$$

W

HALTING
PROBLEM

$$ARRSTD = A$$

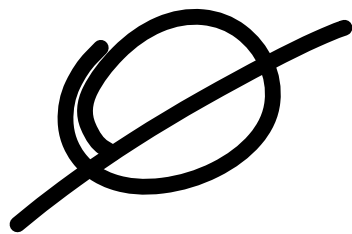
(IF $x = w$)
STOP

GLSS

Loop

$A_{\pi\pi} / B_{\pi\pi}$

$G = \text{EMPTY}$



$= \text{INS}$

VVOOTD



$B_{\pi\pi}$

$\text{IF } x = w$

Loop

$x = \emptyset$

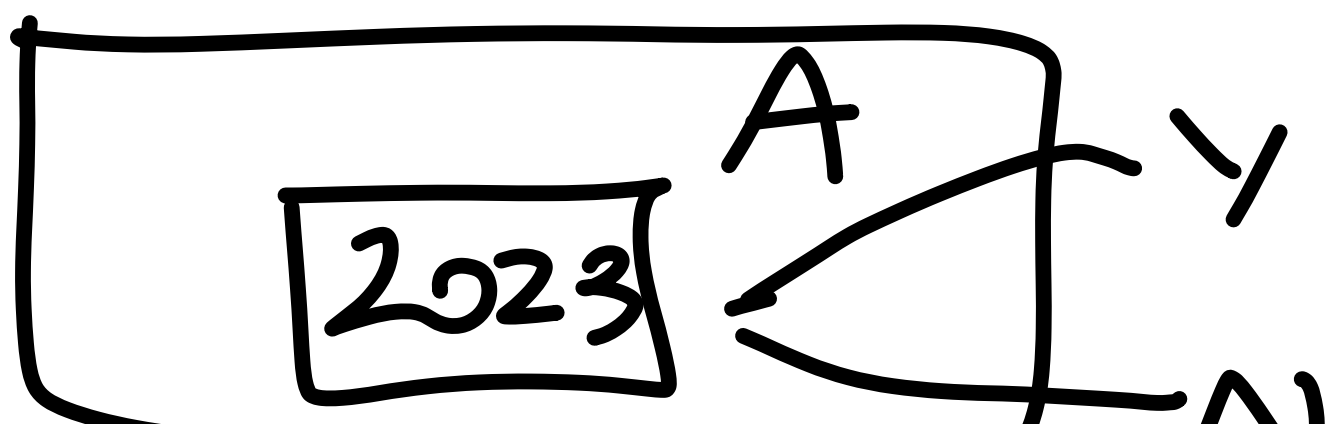
~~ACCEPT~~

$$\left[\begin{array}{l} A_{\pi\pi} \leq \pi \\ H A_{\pi} \leq \pi \end{array} \right]$$

$$2023_{\pi\pi}$$

$$A_{\pi\pi} \leq 2023_{\pi\pi}$$

$$F = \langle \pi, w \rangle$$



USIANO

2023

POUR SPIRITUALS A

$\mathcal{L} \quad W \rightarrow STOP$
(ACCION)

$F = \langle M, W \rangle$

M' (2023)

$M' \rightarrow X$ (INPUT)

✓
1 x = 2023

A T T

M → W

1 M accepts
accepts'

1 M rejects
rejects.



$$\Gamma \rightarrow w$$

$$A \leq_m B$$

$$A_{\Gamma\Gamma} \leq_m 2023$$

$\Gamma\Gamma$

$$\underbrace{A \text{ IND}}_{\text{IND}} / \underbrace{B \text{ IND}}_{\text{IND}}$$

$$\underbrace{B \text{ DSC}}_{\text{DSC}} / \underbrace{A \text{ DSC}}_{\text{DSC}}$$

If $A \in \text{undecidable}$

$\rightarrow B \in \text{undecidable}$

}



Se B è der
allora A è der
