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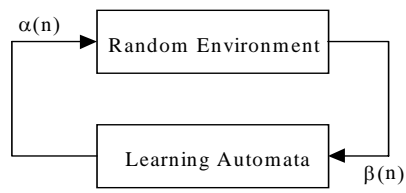
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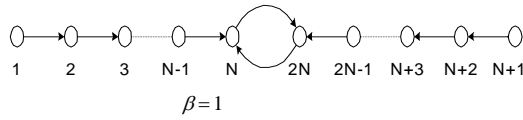
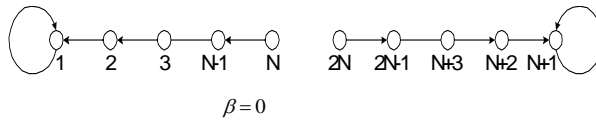
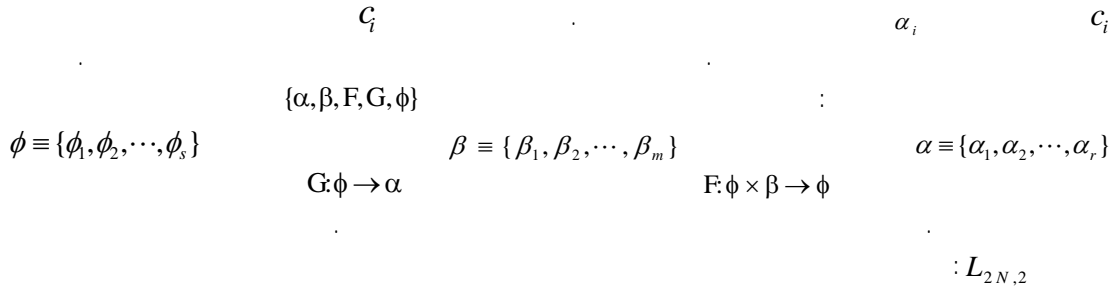
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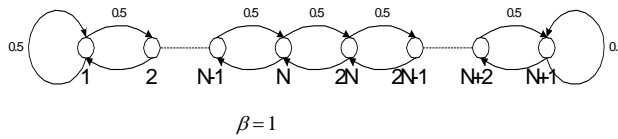


$\alpha \equiv \{\alpha_1, \alpha_2, \dots, \alpha_r\}$        $E \equiv \{\alpha, \beta, c\}$       <sup>2</sup>  
 $\beta$        $c \equiv \{c_1, c_2, \dots, c_r\}$        $\beta \equiv \{\beta_1, \beta_2, \dots, \beta_m\}$   
 $\beta_2 = 0$        $\beta_1 = 1$       P  
 $\beta(n) \in S$        $[0,1]$        $\beta(n) \in Q$   
 $[0,1]$        $[0,1]$

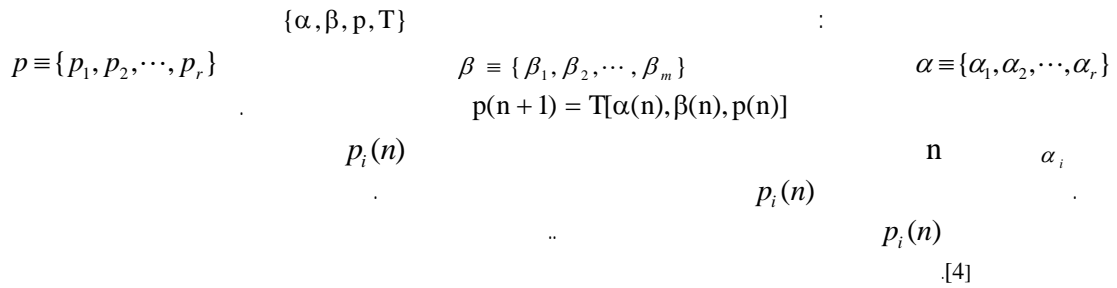
<sup>1</sup> Learning Automata  
<sup>2</sup> Environment



$L_{2N,2}$



Krylov



$$p_i(n+1) = p_i(n) + a[1 - p_i(n)]$$

$$p_j(n+1) = (1-a)p_j(n) \quad j \neq i \quad \forall j$$

$$p_i(n+1) = (1-b)p_i(n)$$

<sup>3</sup> Unfavorable  
<sup>4</sup> Stationary  
<sup>5</sup> Non-Stationary  
<sup>6</sup> Fixed Structure  
<sup>1</sup> Actions  
<sup>2</sup> Variable Structure

$$p_j(n+1) = \frac{b}{r-1} + (1-b)p_j(n) \quad \forall j \quad j \neq i$$

a . . . . . b a . . . . . b a

b . . . . .  $L_{R\epsilon P}$  . . . . . a b . . . . .  $L_{RP}$  . . . . . b

. . . . . [11-15] . . . . .  $L_{RI}$  . . . . .

[6]

[2,6]

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$L_{RP}$  . . . . . (

$L_{RI}$  . . . . .

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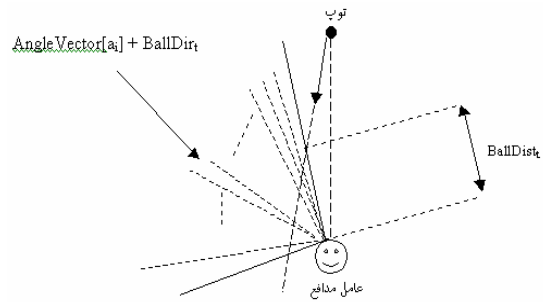
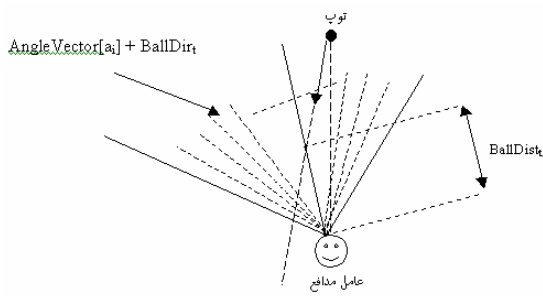
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<sup>3</sup>Linear Reward Pealty  
<sup>4</sup>Linear Reward Epsilon Penalty  
<sup>5</sup>Linear Reward Inaction  
Ball Distance  
Ball Direction

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Pentium III 500



L<sub>RI</sub>

L<sub>RI</sub>

L<sub>RI</sub>

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/ L<sub>RI</sub>

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%	%	%	%	%	%	

L<sub>RI</sub> :

/	/	/	/	/	/		
%	%	%	%	%	%	%	
%	%	%	%	%	%	%	

L<sub>RP</sub>

L<sub>RP</sub>

( / / ) = ( ) ( )

L<sub>RP</sub>

( / / )=( ) L<sub>RP</sub> :

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L<sub>RP</sub> :

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%	%	%	%	%	%	%
%	%	%	%	%	%	%

L<sub>RP</sub> L<sub>RI</sub> L<sub>RP</sub>

L<sub>RP</sub>

L<sub>RI</sub> )

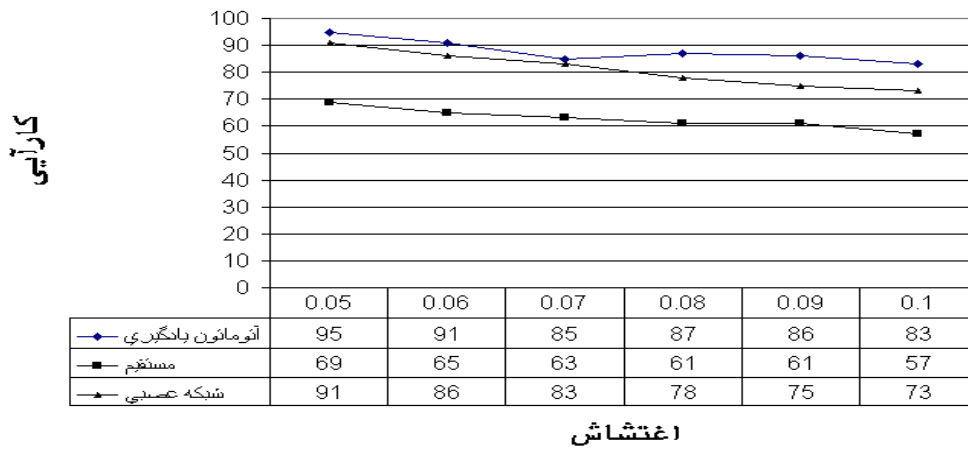
L<sub>RI</sub>

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### مقایسه کارایی روشهای دریافت توپ



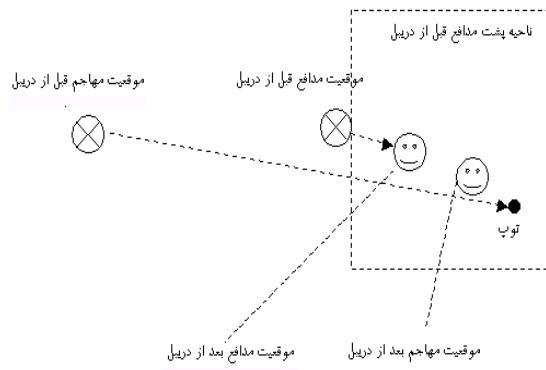
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(Soccer Server)

(kick pow dir )

L<sub>RI</sub> L<sub>RP</sub> ( )



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L<sub>RI</sub> L<sub>RP</sub>

( )

L<sub>RI</sub>

( % )

L<sub>RI</sub>

L<sub>RP</sub>

<sup>1</sup> Kickable Area

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%	%	/ /		L <sub>RP</sub>	%	/ /		L <sub>RP</sub>
%	%	/ /		L <sub>RP</sub>	%	/ /		L <sub>RP</sub> *
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%	%	/		L <sub>RI</sub>	%	/		L <sub>RI</sub> *
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%	%	/		L <sub>RI</sub>	%	/		L <sub>RI</sub>

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