一 四则运算文法

1.1 文法

$$G[E]: E \to E + T|E - T|T$$

$$T \to T \times F|T \div F|F$$
 插广文法
$$F \to (E)|n$$

$$T \to T \times F|T \div F|F$$

$$F \to (E)|n$$

1.2 非终结符 FIRST 集

$$\begin{aligned} & \text{FIRST}(E) = \{(,n\} \\ & \text{FIRST}(T) = \{(,n\} \\ & \text{FIRST}(F) = \{(,n\} \end{aligned}$$

1.3 项目集规范族与预测分析表

	$S_1:S' \to E \cdot , \#$ $E \to E \cdot + T , \# + E \to E \cdot - T , \# + -$	$S_2: E \rightarrow T \cdot , \#+- \times \div \\ T \rightarrow T \cdot \times F , \#+- \times \div \\ T \rightarrow T \cdot \div F , \#+- \times \div$
$S_3: T o F \cdot \ , \#+- imes \div$	$S_4: \begin{tabular}{cccccccccccccccccccccccccccccccccccc$	$S_5: F o n \cdot , \#+- imes \div$
$S_6: F \rightarrow (E \cdot) , \#+-\times \div \\ E \rightarrow E \cdot + T ,)+- \\ E \rightarrow E \cdot - T ,)+-$	$S_7: E \to T \cdot ,)+ T \to T \cdot \times F ,)+-\times \div$ $T \to T \cdot \div F ,)+-\times \div$	$S_8: T o F \cdot \; ,) +- imes \div$

$S_9: F \to (\cdot E)$,)+ $-\times \div$	$S_{10}: F \to n \cdot ,) +- \times \div$	$S_{11}: F \to (E \cdot) ,)+-\times \div$
$E \to E + T$,)+-		$E \to E \cdot +T$,)+-
$E \to E - T$,)+-		$E \to E \cdot -T$,)+-
$E \rightarrow T$,)+-		
$T \to T \times F$,)+ $-\times \div$		
$T \to T \div F$,)+ $-\times \div$		
$T \to F$,)+-×÷		
$F \to \cdot (E)$,)+-×÷		
$F \rightarrow \cdot n$,)+-×÷		
$S_{12}: F o (E) \cdot ,) +- imes \div$	$S_{13}: E \to E + \cdot T$,)+-	$S_{14}: E \to E - \cdot T \qquad ,) + -$
	$T \to T \times F$,)+ $-\times \div$	$T \to T \times F$,)+ $-\times \div$
	$T \to T \div F$,)+ $-\times \div$	$T \to T \div F$,)+ $-\times \div$
	$T \to F$,)+-×÷	$T \to F$,)+-×÷
	$F \to \cdot (E) \qquad ,) + - \times \div$	$F \to \cdot (E)$,)+-×÷
	$F \to \cdot n$,)+-×÷	$F \to \cdot n \qquad ,) + - \times \div$
$S_{15}: E o E - T \cdot ,) + -$	$S_{16}: T \rightarrow T \times \cdot F \ ,) + - \times \div$	$S_{17}: T \rightarrow T \div \cdot F \ ,) + - \times \div$
$T \to T \cdot \times F$,)+ $-\times \div$	$F \to \cdot (E)$,)+-×÷	$F \to \cdot (E)$,)+-×÷
$T \to T \cdot \div F$,)+ $-\times \div$	$F \rightarrow \cdot n$,)+-×÷	$F \to \cdot n$,)+-×÷
$S_{18}: T \rightarrow T \div F \cdot \ ,) + - \times \div$	$S_{19}: T \rightarrow T \times F \cdot \ ,) + - \times \div$	$S_{20}: E \to E + T \cdot ,) + -$
$S_{18}: T \to T \div F \cdot \ ,) + - \times \div$	$S_{19}: T \to T \times F \cdot ,) + - \times \div$	$S_{20}: \xrightarrow{E} \to E + T \cdot ,) + -$ $T \to T \cdot \times F ,) + - \times \div$
$S_{18}: T \to T \div F \cdot ,)+-\times \div$	$S_{19}: T \to T \times F \cdot ,) + - \times \div$	
$S_{18}: T \to T \div F \cdot ,) + - \times \div$ $S_{21}: F \to (E) \cdot , \# + - \times \div$		$T \to T \cdot \times F ,) + - \times \div$
	$S_{22}: T \rightarrow T \times \cdot F \ , \#+-\times \div$	$T \to T \cdot \times F ,) + - \times \div$ $T \to T \cdot \div F ,) + - \times \div$
	$S_{22}: T \to T \times \cdot F , \#+-\times \div$ $F \to \cdot (E) , \#+-\times \div$	$T \rightarrow T \cdot \times F ,) + - \times \div$ $T \rightarrow T \cdot \div F ,) + - \times \div$ $S_{23}: T \rightarrow T \div \cdot F , \# + - \times \div$
$S_{21}: F ightarrow (E) \cdot , \#+- imes \div$	$S_{22}: \textcolor{red}{T} \rightarrow \textcolor{blue}{T} \times \cdot \textcolor{blue}{F} \ , \#+-\times \div \\ F \rightarrow \cdot (E) , \#+-\times \div \\ F \rightarrow \cdot n , \#+-\times \div$	$T \rightarrow T \cdot \times F ,) + - \times \div$ $T \rightarrow T \cdot \div F ,) + - \times \div$ $S_{23} : T \rightarrow T \div \cdot F , \# + - \times \div$ $F \rightarrow \cdot (E) , \# + - \times \div$ $F \rightarrow \cdot n , \# + - \times \div$
$S_{21}: F ightarrow (E) \cdot , \#+- imes \div$	$S_{22}: T \to T \times \cdot F , \#+-\times \div$ $F \to \cdot (E) , \#+-\times \div$	$T \rightarrow T \cdot \times F ,) + - \times \div$ $T \rightarrow T \cdot \div F ,) + - \times \div$ $S_{23} : T \rightarrow T \div \cdot F , \# + - \times \div$ $F \rightarrow \cdot (E) , \# + - \times \div$ $F \rightarrow \cdot n , \# + - \times \div$
$S_{21}: F ightarrow (E) \cdot , \#+- imes \div$	$S_{22}: \textcolor{red}{T} \rightarrow \textcolor{blue}{T} \times \cdot \textcolor{blue}{F} \ , \#+-\times \div \\ F \rightarrow \cdot (E) , \#+-\times \div \\ F \rightarrow \cdot n , \#+-\times \div$	$T \rightarrow T \cdot \times F ,) + - \times \div$ $T \rightarrow T \cdot \div F ,) + - \times \div$ $S_{23} : T \rightarrow T \div \cdot F , \# + - \times \div$ $F \rightarrow \cdot (E) , \# + - \times \div$ $F \rightarrow \cdot n , \# + - \times \div$ $S_{26} : E \rightarrow E + \cdot T , \# + -$
$S_{21}: F ightarrow (E) \cdot , \#+- imes \div$	$S_{22}: \textcolor{red}{T} \rightarrow \textcolor{blue}{T} \times \cdot \textcolor{blue}{F} \ , \#+-\times \div \\ F \rightarrow \cdot (E) , \#+-\times \div \\ F \rightarrow \cdot n , \#+-\times \div$	$T \rightarrow T \cdot \times F ,) + - \times \div$ $T \rightarrow T \cdot \div F ,) + - \times \div$ $S_{23} : T \rightarrow T \div \cdot F , \# + - \times \div$ $F \rightarrow \cdot (E) , \# + - \times \div$ $F \rightarrow \cdot n , \# + - \times \div$ $S_{26} : E \rightarrow E + \cdot T , \# + -$ $T \rightarrow \cdot T \times F , \# + - \times \div$
$S_{21}: F ightarrow (E) \cdot , \#+- imes \div$	$S_{22}: \textcolor{red}{T} \rightarrow \textcolor{blue}{T} \times \cdot \textcolor{blue}{F} \ , \#+-\times \div \\ F \rightarrow \cdot (E) , \#+-\times \div \\ F \rightarrow \cdot n , \#+-\times \div$	$T \rightarrow T \cdot \times F ,) + - \times \div$ $T \rightarrow T \cdot \div F ,) + - \times \div$ $S_{23} : T \rightarrow T \div \cdot F , \# + - \times \div$ $F \rightarrow \cdot (E) , \# + - \times \div$ $F \rightarrow \cdot n , \# + - \times \div$ $S_{26} : E \rightarrow E + \cdot T , \# + -$ $T \rightarrow \cdot T \times F , \# + - \times \div$ $T \rightarrow \cdot T \div F , \# + - \times \div$
$S_{21}: F ightarrow (E) \cdot , \#+- imes \div$	$S_{22}: \textcolor{red}{T} \rightarrow \textcolor{blue}{T} \times \cdot \textcolor{blue}{F} \ , \#+-\times \div \\ F \rightarrow \cdot (E) , \#+-\times \div \\ F \rightarrow \cdot n , \#+-\times \div$	$T \rightarrow T \cdot \times F ,) + - \times \div$ $T \rightarrow T \cdot \div F ,) + - \times \div$ $S_{23} : T \rightarrow T \div \cdot F , \# + - \times \div$ $F \rightarrow \cdot (E) , \# + - \times \div$ $F \rightarrow \cdot n , \# + - \times \div$ $S_{26} : E \rightarrow E + \cdot T , \# + -$ $T \rightarrow \cdot T \times F , \# + - \times \div$ $T \rightarrow \cdot T \div F , \# + - \times \div$ $T \rightarrow \cdot F , \# + - \times \div$ $T \rightarrow \cdot F , \# + - \times \div$
$S_{21}: F \to (E) \cdot , \#+-\times \div$ $S_{24}: T \to T \div F \cdot , \#+-\times \div$	$S_{22}: \textcolor{red}{T} \rightarrow \textcolor{blue}{T} \times \cdot \textcolor{blue}{F} \ , \#+-\times \div \\ F \rightarrow \cdot (E) , \#+-\times \div \\ F \rightarrow \cdot n , \#+-\times \div$	$T \rightarrow T \cdot \times F ,) + - \times \div$ $T \rightarrow T \cdot \div F ,) + - \times \div$ $S_{23} : T \rightarrow T \div \cdot F , \# + - \times \div$ $F \rightarrow \cdot (E) , \# + - \times \div$ $F \rightarrow \cdot n , \# + - \times \div$ $S_{26} : E \rightarrow E + \cdot T , \# + -$ $T \rightarrow \cdot T \times F , \# + - \times \div$ $T \rightarrow \cdot T \div F , \# + - \times \div$ $T \rightarrow \cdot F , \# + - \times \div$ $F \rightarrow \cdot (E) , \# + - \times \div$ $F \rightarrow \cdot n , \# + - \times \div$
$S_{21}: F ightarrow (E) \cdot \ , \# + - imes \div$ $S_{24}: T ightarrow T \div F \cdot \ , \# + - imes \div$ $S_{27}: E ightarrow E - \cdot T \qquad , \# + -$	$S_{22}: T \to T \times \cdot F , \#+-\times \div$ $F \to \cdot (E) , \#+-\times \div$ $F \to \cdot n , \#+-\times \div$ $S_{25}: T \to T \times F \cdot , \#+-\times \div$	$T \rightarrow T \cdot \times F ,) + - \times \div$ $T \rightarrow T \cdot \div F ,) + - \times \div$ $S_{23} : T \rightarrow T \div \cdot F , \# + - \times \div$ $F \rightarrow \cdot (E) , \# + - \times \div$ $F \rightarrow \cdot n , \# + - \times \div$ $S_{26} : E \rightarrow E + \cdot T , \# + - \times \div$ $T \rightarrow \cdot T \times F , \# + - \times \div$ $T \rightarrow \cdot T \div F , \# + - \times \div$ $T \rightarrow \cdot F , \# + - \times \div$ $F \rightarrow \cdot (E) , \# + - \times \div$ $F \rightarrow \cdot n , \# + - \times \div$ $S_{29} : E \rightarrow E + T \cdot , \# + -$
$S_{21}: F \to (E) \cdot , \#+-\times \div$ $S_{24}: T \to T \div F \cdot , \#+-\times \div$ $S_{27}: E \to E - \cdot T , \#+-$ $T \to \cdot T \times F , \#+-\times \div$	$S_{22}: T \rightarrow T \times \cdot F , \#+-\times \div$ $F \rightarrow \cdot (E) , \#+-\times \div$ $F \rightarrow \cdot n , \#+-\times \div$ $S_{25}: T \rightarrow T \times F \cdot , \#+-\times \div$ $S_{28}: E \rightarrow E - T \cdot , \#+-$	$T \rightarrow T \cdot \times F ,) + - \times \div$ $T \rightarrow T \cdot \div F ,) + - \times \div$ $S_{23} : T \rightarrow T \div \cdot F , \# + - \times \div$ $F \rightarrow \cdot (E) , \# + - \times \div$ $F \rightarrow \cdot n , \# + - \times \div$ $S_{26} : E \rightarrow E + \cdot T , \# + - \times \div$ $T \rightarrow \cdot T \times F , \# + - \times \div$ $T \rightarrow \cdot T \div F , \# + - \times \div$ $T \rightarrow \cdot F , \# + - \times \div$ $F \rightarrow \cdot (E) , \# + - \times \div$ $F \rightarrow \cdot n , \# + - \times \div$ $S_{29} : E \rightarrow E + T \cdot , \# + - \times \div$ $T \rightarrow T \cdot \times F , \# + - \times \div$
$S_{21}: F \to (E) \cdot , \#+-\times \div$ $S_{24}: T \to T \div F \cdot , \#+-\times \div$ $S_{27}: E \to E - \cdot T , \#+-$ $T \to \cdot T \times F , \#+-\times \div$	$S_{22}: T \rightarrow T \times \cdot F , \#+-\times \div$ $F \rightarrow \cdot (E) , \#+-\times \div$ $F \rightarrow \cdot n , \#+-\times \div$ $S_{25}: T \rightarrow T \times F \cdot , \#+-\times \div$ $S_{28}: E \rightarrow E - T \cdot , \#+-$ $T \rightarrow T \cdot \times F , \#+-\times \div$	$T \rightarrow T \cdot \times F ,) + - \times \div$ $T \rightarrow T \cdot \div F ,) + - \times \div$ $S_{23} : T \rightarrow T \div \cdot F , \# + - \times \div$ $F \rightarrow \cdot (E) , \# + - \times \div$ $F \rightarrow \cdot n , \# + - \times \div$ $S_{26} : E \rightarrow E + \cdot T , \# + - \times \div$ $T \rightarrow \cdot T \times F , \# + - \times \div$ $T \rightarrow \cdot T \div F , \# + - \times \div$ $T \rightarrow \cdot F , \# + - \times \div$ $F \rightarrow \cdot (E) , \# + - \times \div$ $F \rightarrow \cdot n , \# + - \times \div$ $S_{29} : E \rightarrow E + T \cdot , \# + - \times \div$ $T \rightarrow T \cdot \times F , \# + - \times \div$
$S_{21}: F \to (E) \cdot , \# + - \times \div$ $S_{24}: T \to T \div F \cdot , \# + - \times \div$ $S_{27}: E \to E - \cdot T , \# + - \times \div$ $T \to \cdot T \times F , \# + - \times \div$ $T \to \cdot T \div F , \# + - \times \div$	$S_{22}: T \rightarrow T \times \cdot F , \#+-\times \div$ $F \rightarrow \cdot (E) , \#+-\times \div$ $F \rightarrow \cdot n , \#+-\times \div$ $S_{25}: T \rightarrow T \times F \cdot , \#+-\times \div$ $S_{28}: E \rightarrow E - T \cdot , \#+-$ $T \rightarrow T \cdot \times F , \#+-\times \div$	$T \rightarrow T \cdot \times F ,) + - \times \div$ $T \rightarrow T \cdot \div F ,) + - \times \div$ $S_{23} : T \rightarrow T \div \cdot F , \# + - \times \div$ $F \rightarrow \cdot (E) , \# + - \times \div$ $F \rightarrow \cdot n , \# + - \times \div$ $S_{26} : E \rightarrow E + \cdot T , \# + - \times \div$ $T \rightarrow \cdot T \times F , \# + - \times \div$ $T \rightarrow \cdot T \div F , \# + - \times \div$ $T \rightarrow \cdot F , \# + - \times \div$ $F \rightarrow \cdot (E) , \# + - \times \div$ $F \rightarrow \cdot n , \# + - \times \div$ $S_{29} : E \rightarrow E + T \cdot , \# + - \times \div$ $T \rightarrow T \cdot \times F , \# + - \times \div$
$S_{21}: F \to (E) \cdot , \#+-\times \div$ $S_{24}: T \to T \div F \cdot , \#+-\times \div$ $T \to T \times F , \#+-\times \div$ $T \to T \times F , \#+-\times \div$ $T \to F , \#+-\times \div$ $T \to F , \#+-\times \div$	$S_{22}: T \rightarrow T \times \cdot F , \#+-\times \div$ $F \rightarrow \cdot (E) , \#+-\times \div$ $F \rightarrow \cdot n , \#+-\times \div$ $S_{25}: T \rightarrow T \times F \cdot , \#+-\times \div$ $S_{28}: E \rightarrow E - T \cdot , \#+-$ $T \rightarrow T \cdot \times F , \#+-\times \div$	$T \rightarrow T \cdot \times F ,) + - \times \div$ $T \rightarrow T \cdot \div F ,) + - \times \div$ $S_{23} : T \rightarrow T \div \cdot F , \# + - \times \div$ $F \rightarrow \cdot (E) , \# + - \times \div$ $F \rightarrow \cdot n , \# + - \times \div$ $S_{26} : E \rightarrow E + \cdot T , \# + - \times \div$ $T \rightarrow \cdot T \times F , \# + - \times \div$ $T \rightarrow \cdot T \div F , \# + - \times \div$ $T \rightarrow \cdot F , \# + - \times \div$ $F \rightarrow \cdot (E) , \# + - \times \div$ $F \rightarrow \cdot n , \# + - \times \div$ $S_{29} : E \rightarrow E + T \cdot , \# + - \times \div$ $T \rightarrow T \cdot \times F , \# + - \times \div$

表 1 LR(1) 项目集表

117.44	ACTION				C	GOTO					
状态	+	_	×	÷	()	n	#	E	T	F
0					S_4		S_5		1	2	3
1	S_{26}	S_{27}						ACC			
2	R_{E-2}	R_{E-2}	S_{22}	S_{23}				$R_{E ext{-}2}$			
3	R_{T-2}	R_{T-2}	R_{T-2}	R_{T-2}				R_{T-2}			
4					S_9		S_{10}		6	7	8
5	R_{F-1}	R_{F-1}	R_{F-1}	R_{F-1}				R_{F-1}			
6	S_{13}	S_{14}				S_{21}					
7	R_{E-2}	R_{E-2}	S_{16}	S_{17}		R_{E-2}					
8	R_{T-2}	R_{T-2}	R_{T-2}	R_{T-2}		R_{T-2}					
9					S_9		S_{10}		11	7	8
10	R_{F-1}	R_{F-1}	R_{F-1}	R_{F-1}		R_{F-1}					
11	S_{13}	S_{14}				S_{12}					
12	R_{F-0}	R_{F-0}	R_{F-0}	R_{F-0}		R_{F-0}					
13					S_9		S_{10}			20	8
14					S_9		S_{10}			15	8
15	R_{E-1}	$R_{E ext{-}1}$	S_{16}	S_{17}		R_{E-1}					
16					S_9		S_{10}				19
17					S_9		S_{10}				18
18	R_{T-1}	R_{T-1}	R_{T-1}	R_{T-1}		R_{T-1}					
19	R_{T-0}	$R_{T ext{-}0}$	$R_{T ext{-}0}$	R_{T-0}		R_{T-0}					
20	$R_{E ext{-}0}$	$R_{E ext{-}0}$	S_{16}	S_{17}		R_{E-0}					
21	R_{F-0}	$R_{F ext{-}0}$	R_{F-0}	$R_{F ext{-}0}$				$R_{F ext{-}0}$			
22					S_4		S_5				25
23					S_4		S_5				24
24	R_{T-1}	R_{T-1}	R_{T-1}	R_{T-1}				R_{T-1}			
25	R_{T-0}	R_{T-0}	R_{T-0}	R_{T-0}				$R_{T ext{-}0}$			
26					S_4		S_5			29	3
27					S_4		S_5			28	3
28	R_{E-1}	R_{E-1}	S_{22}	S_{23}				R_{E-1}			
29	$R_{E ext{-}0}$	$R_{E ext{-}0}$	S_{22}	S_{23}				$R_{E ext{-}0}$			

表 2 LR(1) 预测分析表

1.4 分析过程

步骤	状态栈	符号栈	输入串	ACTION	GOTO
1	0	#	$(n+n)\times n-n\div n\#$	S_4	
2	0,4	#($n+n) \times n-n \div n \#$	S_{10}	
3	0,4,10	#(n	$+n) \times n - n \div n \#$	R_{F-1}	8
4	0,4,8	#(F	$+n) \times n - n \div n \#$	R_{T-2}	7

步骤	状态栈	符号栈	输入串	ACTION	GOTO
5	0,4,7	#(T	$+n) \times n - n \div n \#$	R_{E-2}	6
6	0,4,6	#(E	$+n){\times}n{-}n{\div}n\#$	S_{13}	
7	0,4,6,13	#(E+	$n){\times}n{-}n{\div}n\#$	S_{10}	
8	0,4,6,13,10	#(E+n	$){\times}n{-}n{\div}n\#$	R_{F-1}	8
9	0,4,6,13,8	$\#(E{+}F$	$){\times}n{-}n{\div}n\#$	R_{T-2}	20
10	0,4,6,13,20	#(E+T	$){\times}n{-}n{\div}n\#$	R_{E-0}	6
11	0,4,6	#(E	$){\times}n{-}n{\div}n\#$	S_{21}	
12	0,4,6,21	#(E)	$\times n-n \div n \#$	R_{F-0}	3
13	0,3	#F	$\times n-n \div n \#$	R_{T-2}	2
14	0,2	#T	$\times n - n \div n \#$	S_{22}	
15	0,2,22	#T imes	$n{-}n{\div}n\#$	S_5	
16	$0,\!2,\!22,\!5$	$\#T \times n$	$-n \div n \#$	R_{F-1}	25
17	0,2,22,25	$\#T \times F$	$-n \div n \#$	R_{T-0}	2
18	0,2	#T	$-n \div n \#$	R_{E-2}	1
19	0,1	#E	$-n \div n \#$	S_{27}	
20	0,1,27	#E-	$n \div n \#$	S_5	
21	0,1,27,5	$\#E{-n}$	$\div n\#$	R_{F-1}	3
22	0,1,27,3	$\#E{-}F$	$\div n\#$	R_{T-2}	28
23	0,1,27,28	$\#E{-}T$	$\div n\#$	S_{23}	
24	0,1,27,28,23	$\#E{-}T{\div}$	n#	S_5	
25	0,1,27,28,23,5	$\#E{-}T{\div}n$	#	R_{F-1}	24
26	0,1,27,28,23,24	$\#E{-}T{\div}F$	#	R_{T-1}	28
27	0,1,27,28	$\#E{-}T$	#	R_{E-1}	1
28	0,1	#E	#	ACC	

表 3 $(n+n) \times n - n \div n$ 的 LR(1) 分析过程

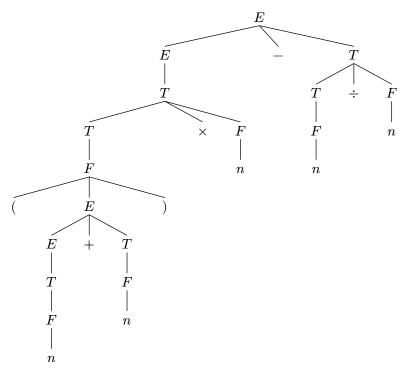


图 1 (n+n)×n-n÷n 的 LR(1) 语法树

二 非 LR1 文法

2.1 文法

$$G[S]: S o Aa|Bb$$
 $G[S']: S' o S$
$$A o Ab|\varepsilon|b \qquad \qquad$$
 $\Rightarrow \qquad \qquad S o Aa|Bb$
$$B o Ba|\varepsilon \qquad \Rightarrow \qquad \qquad A o Ab|\varepsilon|b$$

$$B o Ba|\varepsilon$$

2.2 非终结符 FIRST 集

$$\begin{aligned} & \text{FIRST}(S) = \{b, a\} \\ & \text{FIRST}(A) = \{\varepsilon, b\} \\ & \text{FIRST}(B) = \{\varepsilon, a\} \end{aligned}$$

2.3 项目集规范族与预测分析表

$S_0:S' o\cdot S$,#	$S_1:S' o S$, #	$S_2:S\to A\cdot a ,\#$
$S \rightarrow Aa$,#		$A o A \cdot b$, ab
$S \rightarrow \cdot Bb$,#		
$A \rightarrow Ab$, ab		
$A \rightarrow \cdot$, ab		
$A \rightarrow \cdot b$, ab		
$B o \cdot Ba$, ba		
$B o \cdot$, ba		
$S_3:S\to B\cdot b,\#$	$S_4:A o b$, ab	$S_5:S o Bb\cdot \ ,\#$
$B o B \cdot a$, ba		
$S_6: B ightarrow Ba \cdot , { m ba}$	$S_7:S o Aa\cdot \ ,\#$	$S_8:A o Ab\cdot \ , ext{ab}$

表 4 LR(1) 项目集表

状态	ACTION				GOTO			
	a	b	#	S	A	B		
0	$R_{A\text{-}1}$, $R_{B\text{-}1}$	S_4, R_{A-1}, R_{B-1}		1	2	3		
1			ACC					
2	S_7	S_8						
3	S_6	S_5						
4	R_{A-2}	R_{A-2}						
5			R_{S-1}					
6	R_{B-0}	$R_{B ext{-}0}$						
7			R_{S-0}					
8	R_{A-0}	$R_{A ext{-}0}$						

表 5 LR(1) 预测分析表

!!! 该文法非 LR1 文法