

$\alpha \times$

	S	1	2	...	$N-1$	N	L
S	0	m_{S1}	0	...	0	0	0
1	m_{S1}	0	m_{12}	...	0	0	0
2	0	m_{12}	0	...	0	0	0
$\vdots$	$\vdots$	$\vdots$	$\vdots$	$\ddots$	$\vdots$	$\vdots$	$\vdots$
$N-1$	0	0	0	...	0	$m_{N-1 N}$	0
N	0	0	0	...	$m_{N-1 N}$	0	m_{NL}
L	0	0	0	...	0	m_{NL}	0

$\alpha \times$

Coupling Matrix

(a)



	S	1	2	...	$N-1$	N	L
S	0	$j \alpha m_{S1}$	0	...	0	0	0
1	$j \alpha m_{S1}$	$\alpha^2 S$	$j \alpha m_{12}$	...	0	0	0
2	0	$j \alpha m_{12}$	S	...	0	0	0
$\vdots$	$\vdots$	$\vdots$	$\vdots$	$\ddots$	$\vdots$	$\vdots$	$\vdots$
$N-1$	0	0	0	...	S	$j m_{N-1 N}$	0
N	0	0	0	...	$j m_{N-1 N}$	S	$j m_{NL}$
L	0	0	0	...	0	$j m_{NL}$	0

Admittance Matrix

(b)