0	0	$l_1 c_{lpha-arphi_p} (\dot{lpha}-arphi_p)$	$\frac{1}{2}rs_{\alpha-\varphi_p}(\dot{\alpha}-\dot{\varphi_p})$	$\frac{1}{2}rs_{\alpha-\varphi_p}(\dot{\alpha}-\dot{\varphi_p})$	$-l_1 c_{lpha-arphi_p} ig(\dot{lpha}-\dot{arphi_p}ig)$
0	0	$l_1 s_{lpha - arphi_p} (\dot{lpha} - \dot{arphi_p})$	$-\frac{1}{2}rc_{\alpha-\varphi_p}(\dot{\alpha}-\dot{\varphi_p})$	$-\frac{1}{2}rc_{\alpha-\varphi_p}(\dot{\alpha}-\dot{\varphi_p})$	$-l_1 s_{lpha-arphi_p} ig(\dot{lpha}-\dot{arphi_p}ig)$
0	0	0	0	0	0