

1 Magnus expansion for A, B constant and deterministic

1.1 Values of Moments

Configuration $\Delta = 0.0001, M = 1000$

Method	$E[(X_t^{11})^k]$	$E[(X_t^{12})^k]$	$E[(X_t^{21})^k]$	$E[(X_t^{22})^k]$	run 1	run 2	run 3	mean
$k = 1$								
euler	0.884995	0.136974	-0.913738	1.99784	6.90106	6.86149	6.83032	6.86429
m1	0	0	0	0	0	0	0	0
m2	0	0	0	0	0	0	0	0
m3	0.886685	0.132748	-0.910886	1.9915	0.592334	0.185966	0.199469	0.325923
$k = 2$								
euler	1.20982	1.09315	1.78757	7.06842	6.90304	6.8609	6.83021	6.86471
m1	0	0	0	0	0	0	0	0
m2	0	0	0	0	0	0	0	0
m3	1.21421	1.09186	1.77727	7.00593	0.591703	0.186955	0.199412	0.326023
$k = 3$								
euler	2.62519	-3.20706	-5.74199	40.8729	6.9009	6.86093	6.83029	6.86404
m1	0	0	0	0	0	0	0	0
m2	0	0	0	0	0	0	0	0
m3	2.6546	-3.27689	-5.70576	40.2687	0.591901	0.185915	0.199631	0.325816