

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	6.85981	6.89005	6.87072	6.87353
m1	0	0	0	0	0	0	0	0
m2	0.92461	0.0488442	-0.889341	2.00131	0.320205	0.16783	0.123071	0.203702
m3	0	0	0	0	0	0	0	0
$k = 2$								
euler	1.20982	1.09315	1.78757	7.06842	6.86114	6.89052	6.87033	6.874
m1	0	0	0	0	0	0	0	0
m2	1.31038	1.18291	1.7166	7.07746	0.319443	0.168869	0.122936	0.203749
m3	0	0	0	0	0	0	0	0
$k = 3$								
euler	2.62519	-3.20706	-5.74199	40.8729	6.85959	6.89016	6.87044	6.8734
m1	0	0	0	0	0	0	0	0
m2	2.95392	-4.05804	-5.44452	40.8636	0.319602	0.168065	0.123078	0.203582
m3	0	0	0	0	0	0	0	0