

Note to section 7 of the dissertation
"Efficient and High Resolution Level Set Simulations"
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The performance benchmarks of model problems 1-3 in section 7 of the dissertation "Efficient and High Resolution Level Set Simulations - Data Structures, Algorithms and Applications" were run on a computer with 2GB of main memory. These results do not illustrate how swapping between main memory and disk may affect the performance for level set data structures that store a dense uniform grid. Below a comparison between the average run-time per iteration (in seconds) for simulations running with 1 GB and 2 GB of main memory is shown. For the test cases considered in the dissertation, the effect appears to be minor in the case of the low order accurate discretization. For the high order accurate discretization, the average run-time may be about an order of magnitude larger with 1 GB of main memory compared to 2 GB of main memory.

Grid\Resolution	R4	
	Avg Time	Avg Time
	1 GB	2 GB
DT-Grid	2.7	2.7
Peng I	43	42
Peng II	3.9	3.8

Table 1: Model problem 1 using the low order accurate discretization.

Grid\Resolution	R4	
	Avg Time	Avg Time
	1 GB	2 GB
DT-Grid	54.2	54.2
Peng I	NP	NP
Peng II	522	62.4

Table 2: Model problem 1 using the high order accurate discretization.

Grid\Resolution	R4	
	Avg Time	Avg Time
	1 GB	2 GB
DT-Grid	4.8	4.8
Peng I	25.7	25.9
Peng II	6.3	6.3

Table 3: Model problem 2 using the low order accurate discretization.

Grid\Resolution	R4	
	Avg Time	Avg Time
	1 GB	2 GB
DT-Grid	81.5	81.5
Peng I	121	107
Peng II	114	89

Table 4: Model problem 2 using the high order accurate discretization.

Grid\Resolution	R4	
	Avg Time	Avg Time
	1 GB	2 GB
DT-Grid	4.4	4.4
Peng I	45	43
Peng II	6.6	6.2

Table 5: Model problem 3 using the low order accurate discretization.

Grid\Resolution	R4	
	Avg Time	Avg Time
	1 GB	2 GB
DT-Grid	80.1	80.1
Peng I	828	126
Peng II	905	98.3

Table 6: Model problem 3 using the high order accurate discretization.