

Table 1: Comparison of EPA's AERMOD.EXE and AERMOD-HPCS 1.8.1 on MS Windows®

Platform	NODE10	NODE13	NODE16	NODED2	NODE17	speed-up of node17 versus other nodes			
Processor	Intel IA32	Intel IA32	AMD Turion	Athlon 64x2	Intel IA32				
OS	Windows XP	Windows 2K	Windows XP	Windows XP	Windows XP				
CPUs/cores	dual CPU	single CPU	dual core	dual core	dual quad				
Clock	3.06GHz	3GHz	2GHz	1.91GHz	3GHz				
FSB	533MHz	800MHz			1333MHz				
L1 cache	8KB	16KB	256KB	256KB					
L2 cache	1MB	1MB	0.512MB	0.512MB	12MB				
L3 cache	none	none	none	none	none				
						10/17	13/17	16/17	D2/17
<b>AERMOD-HPCS v1.8.1</b>									
CASE 1	266.5	393.1	674.2	282.1	128.6	2.1	3.1	5.2	2.2
CASE 2	489.6	800.9	1236.8	518.7	254.3	1.9	3.1	4.9	2.0
CASE 4	5398.2	8303.1	14053.1	5879.2	2730.5	2.0	3.0	5.1	2.2
CASE 5	30968.8	47769.9	79213.7	33128.8	15478.9	2.0	3.1	5.1	2.1
total seconds	37123.2	57266.9	95177.8	39808.8	18592.3	2.0	3.1	5.1	2.1
<b>total hours</b>	<b>10.3</b>	<b>15.9</b>	<b>26.4</b>	<b>11.1</b>	<b>5.2</b>	<b>2.0</b>	<b>3.1</b>	<b>5.1</b>	<b>2.1</b>
<b>AERMOD.EXE</b>									
CASE 1	529.9	855.9	1255.0	540.0	272.0	1.9	3.1	4.6	2.0
CASE 2	903.4	1506.4	2100.0	840.0	459.0	2.0	3.3	4.6	1.8
CASE 4	13340.1	22850.6	29220.0	12240.0	7560.0	1.8	3.0	3.9	1.6
CASE 5	67963.3	123129.7	152340.0	63900.0	37620.0	1.8	3.3	4.0	1.7
total seconds	82736.7	148342.6	184915.0	77520.0	45911.0	1.8	3.2	4.0	1.7
<b>total hours</b>	<b>23.0</b>	<b>41.2</b>	<b>51.4</b>	<b>21.5</b>	<b>12.8</b>	<b>1.8</b>	<b>3.2</b>	<b>4.0</b>	<b>1.7</b>
<b>Speed-up of AERMOD-HPCS v1.8.1 versus AERMOD.EXE</b>									
CASE 1	1.99	2.18	1.86	1.91	2.11	0.9	1.0	0.9	0.9
CASE 2	1.85	1.88	1.70	1.62	1.81	1.0	1.0	0.9	0.9
CASE 4	2.47	2.75	2.08	2.08	2.77	0.9	1.0	0.8	0.8
CASE 5	2.19	2.58	1.92	1.93	2.43	0.9	1.1	0.8	0.8
<b>mean speedup</b>	<b>2.23</b>	<b>2.59</b>	<b>1.94</b>	<b>1.95</b>	<b>2.47</b>	<b>0.9</b>	<b>1.0</b>	<b>0.8</b>	<b>0.8</b>