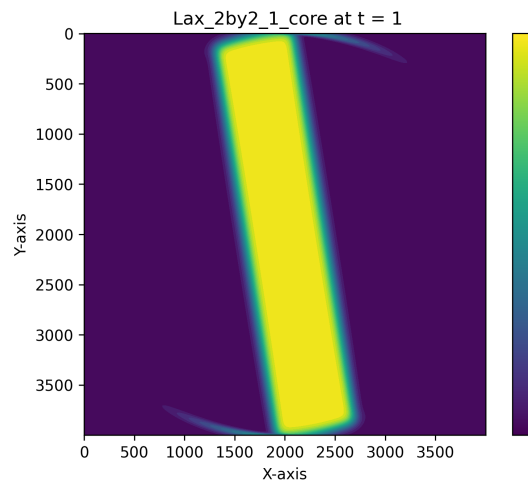
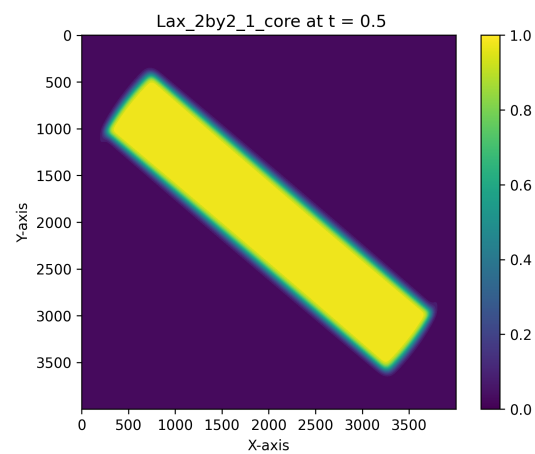
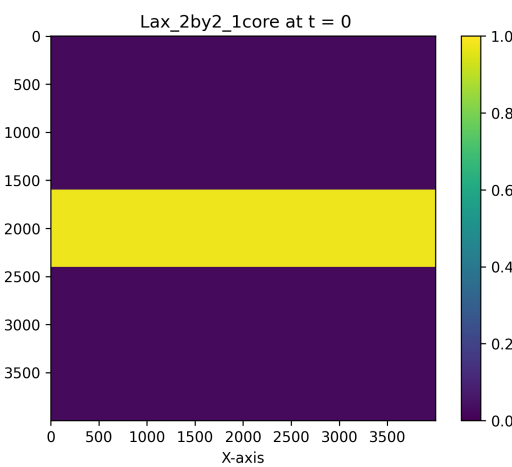
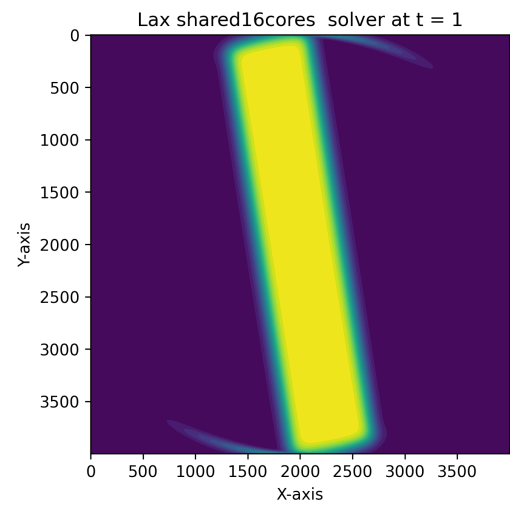
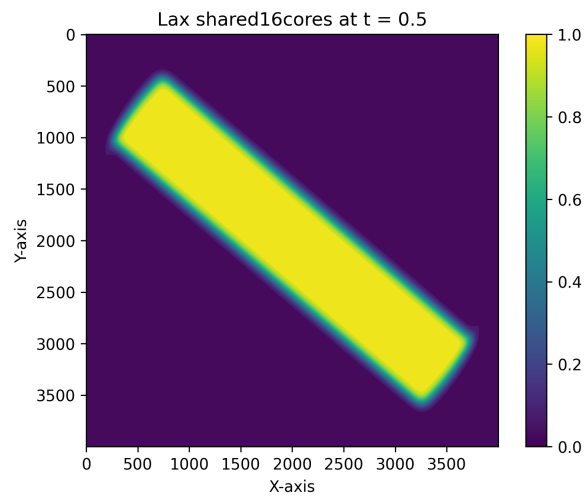
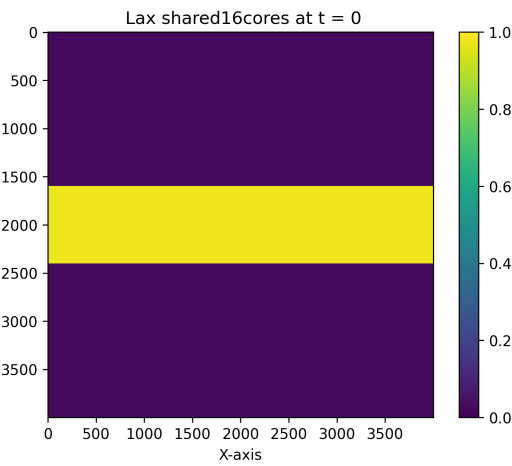
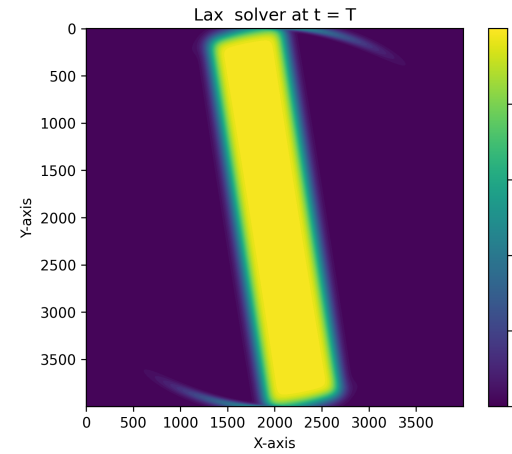
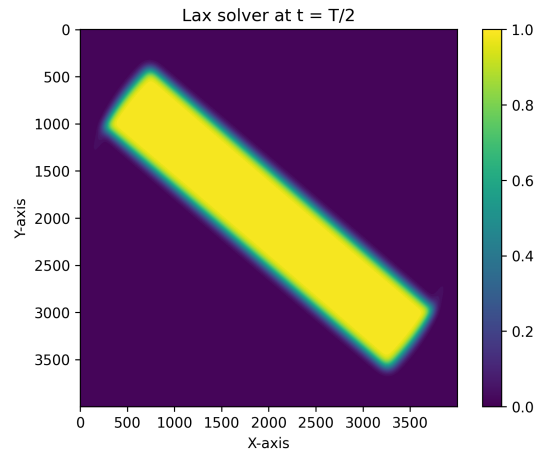
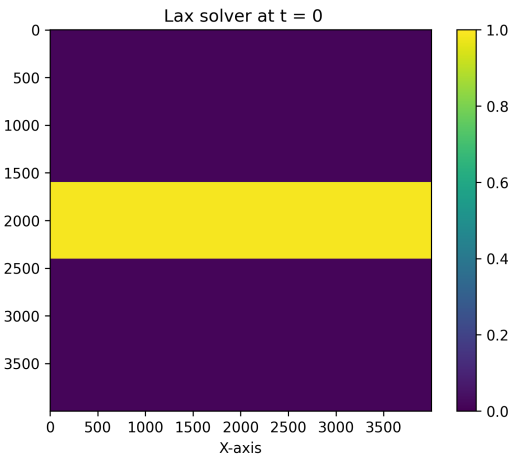


First Name : Qi  
CNETID: qiwang001



Programming Model	Nodes	Cores per node	Execution Time(s)
MPI	1	1	1562
MPI	2 ✕ 1	1	752
MPI	2 ✕ 2	1	384
MPI	3 ✕ 3	1	
MPI	4 ✕ 4	1	123
OPENMP	1	1	1562
OPENMP	1	2	875
OPENMP	1	4	430
OPENMP	1	9	192
OPENMP	1	16	115
One MPI Rank per node(hybrid)	1	16	115

Programming Model	Nodes	Cores per node	Execution Time(s)
One MPI Rank per node(hybrid)	2 ✕ 1	16	721
One MPI Rank per node(hybrid)	2 ✕ 2	16	178
One MPI Rank per node(hybrid)	3 ✕ 3	16	
One MPI Rank per node(hybrid)	4 ✕ 4	16	Continuously unable to request resource

Best performance achieved: 115s .

Configuration: openmp 1node 16 cores.

Note: the correctness of the result (highlighted in red) of configuration 4\*4 node , each node 1 cpu has not been proved as I am still solving problem in plotting the picture of this case.