PARALLEL CODE: OTHER ACCELERATIONS

MAKE USE OF THE CACHE

T3E DEC alpha 21164 processor

T3E 600 300 Mhz clock
T3E 900 450 Mhz clock

Dcache	8 kbytes	(tiny)	Fast
Scache	96 kbytes	(reasonable)	Fast
Main memory	128 Mbytes	(lots)	Slow

When a number is requested from main memory, a CACHE LINE (32 kbytes) of its neighbours come too. **Must make use of this fact and use those neighbours once they are there.**

This is particularly important in calculating the nonlinear terms.

PAD ARRAYS

Avoids memory bank comflicts/cache line misses

USE STREAMS ON THE T3E

Trys to improve cache performance via hardware

CALCULATE IN 32−bit ARITHMETIC

Basically gain a factor of 2 in speed if use HALF PRECISION instead of SINGLE PRECISION. This assumes that the physics can stand this.

AVOID COSTLY FUNCTIONS

Stick to addition and multiplication. Even avoid division! Commit suicide if you have to do an exponentiation!

LET THE COMPILER DO IT'S STUFF!

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−Oscalar3,aggress,inline1,pipeline3
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