NEKCEM

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Contents

Chapter 1

Todo List

Member COPY make this more general than just working with REAL

Member movwin_setup things to do can be called out here

Member RDMESHW things to do can be called out here

Chapter 2

File Index

2.1 File List

Here is a list of all documented files with brief descriptions:

Chapter 3

File Documentation

3.1 libs/libtfs/tools.c File Reference

Tools related to XXT, such as moving window element to processor mapping.

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <limits.h>
#include <float.h>
#include <math.h>
#include <time.h>
#include <unistd.h>
#include "const.h"
#include "types.h"
#include "comm.h"
#include "error.h"
#include "ivec.h"
#include "bss_malloc.h"
#include "queue.h"
```

Defines

- #define **MAX_REA_NAME** 120
- #define **STD_READ_BUF** 1000

Functions

- void **fxxt_ivertex_map_** (int ∗x, int ∗nelv, int ∗ncr)
- void **fxxt_ivertex_mapw_** (int ∗x, int ∗nelv, int ∗ncr)

- void xxt_elm_to_proc_ (int *out_map, int *nelgt, int *dim)
- void xxt_elm_to_procw_ (int *out_map, int *nelgt, int *dim, int *start, int *end, int *se)
- void **hmt_set_file_names_** (int *nn, char *path)
- void **hmt_fix_path_** (int *nn, char *path)
- void **hmt_fix_param_** (REAL *htol, REAL *h2, REAL *lpc, REAL *gpc)

Variables

- char **dir_name** [MAX_REA_NAME+5]
- char **rea_name** [MAX_REA_NAME+5]
- char **map_name** [MAX_REA_NAME+5]
- char **sep_name** [MAX_REA_NAME+5]
- int **slices** [256]

3.1.1 Detailed Description

Tools related to XXT, such as moving window element to processor mapping.

A detailed description goes here

3.1.2 Function Documentation

3.1.2.1 void xxt_elm_to_proc_ (int * *out_map*, int * *nelgt*, int * *dim*)

Element to processor map (non moving window)

Read in element to processor map information for non-moving window case. In this case, we use the mapping provided by genmap without modification.

Parameters:

out_map Element mapping. Position-based. I.e. out_map[0]=5 means element 0 is assigned to rank 5

nelgt number of global elements

dim number of vertices per element

3.1.2.2 void xxt_elm_to_procw_ (int * *out_map*, int * *nelgt*, int * *dim*, int * *start*, int * *end*, int * *se*)

Read in element to processor map information for moving window case.

Parameters:

out_map Element mapping. Position-based. I.e. out_map[0]=5 means element 0 is assigned to rank 5

nelgt number of global elements

dim number of vertices per element

start element number for start of window - 1

end element number for end of window

se number of elements in a slice

3.2 src/mat1.F File Reference

matrix utility routines

Functions

- subroutine **BLANK** (A, N)
- subroutine **VSQ** (A, N)
- subroutine **VSQRT** (A, N)
- subroutine **ADD2S1** (A, B, C1, N)
- subroutine **ADD2S2** (A, B, C1, N)
- subroutine **ADD3S2** (A, B, C, C1, C2, N)
- subroutine **ADD4** (A, B, C, D, N)
- subroutine **INVERS2** (A, B, N)
- subroutine **INVCOL1** (A, N)
- subroutine **INVCOL2** (A, B, N)
- subroutine **INVCOL3** (A, B, C, N)
- subroutine **COL4** (A, B, C, D, N)
- subroutine **ADDCOL3** (A, B, C, N)
- subroutine **ADDCOL4** (A, B, C, D, N)
- subroutine **ASCOL5** (A, B, C, D, E, N)
- subroutine **SUB2** (A, B, N)
- subroutine **SUB3** (A, B, C, N)
- subroutine **SUBCOL3** (A, B, C, N)
- subroutine **SUBCOL4** (A, B, C, D, N)
- subroutine **RZERO** (A, N)
- subroutine **IZERO** (A, N)
- subroutine **IONE** (A, N)
- subroutine **RONE** (A, N)
- subroutine **CFILL** (A, B, N)
- subroutine **IFILL** (IA, IB, N)
- subroutine COPY (A, B, N)

  Copy N REAL elements from B to A.

- subroutine **CHCOPY** (A, B, N)
- subroutine **ICOPY** (A, B, N)
- subroutine **CHSIGN** (A, N)
- subroutine **CMULT** (A, CONST, N)
- subroutine **CADD** (A, CONST, N)
- subroutine **IADD** (I1, ISCAL, N)
- subroutine **CADD2** (A, B, CONST, N)
- REAL **VLMIN** (VEC, N)
- integer **ivlmin** (vec, n)
- integer **ivlmax** (vec, n)
- REAL **VLMAX** (VEC, N)
- REAL **VLAMAX** (VEC, N)
- REAL **VLSUM** (VEC, N)
- subroutine **VCROSS** (U1, U2, U3, V1, V2, V3, W1, W2, W3, N)
- subroutine **VDOT2** (DOT, U1, U2, V1, V2, N)

- subroutine **VDOT3** (DOT, U1, U2, U3, V1, V2, V3, N)
- subroutine **ADDTNSR** (S, H1, H2, H3, NX, NY, NZ)
- function **LTRUNC** (STRING, L)
- function **MOD1** (I, N)
- INTEGER **LOG2** (K)
- subroutine **IFLIP** (I1, N)
- subroutine **ISWAP** (B, IND, N, TEMP)
- function **GLSUM** (X, N)
- REAL **GLAMAX** (A, N)
- function **iglmin** (a, n)
- function **iglmax** (a, n)
- function **iglsum** (a, n)
- function **GLMAX** (A, N)
- function **GLMIN** (A, N)
- subroutine **GLLOG** (LA, LB)
- function **GLSC3** (A, B, MULT, N)
- function **GLSC2** (X, Y, N)
- function **FMDIAN** (A, N, IFOK)
- subroutine **DCADD** (A, CONST, N)
- subroutine **DSUB2** (A, B, N)
- subroutine **DADD2** (A, B, N)
- subroutine **CHSWAPR** (B, l, IND, N, TEMP)
- subroutine **DRCOPY** (R, D, n)
- subroutine **sorts** (xout, xin, work, n)
- function **IVLSUM** (A, N)
- subroutine **ICADD** (A, C, N)
- subroutine **isort** (a, ind, n)
- subroutine **sort** (a, ind, n)
- REAL **VLSC2** (X, Y, N)
- real **vlsc21** (x, y, n)
- subroutine **iswap_ip** (x, p, n)
- subroutine **iswapt_ip** (x, p, n)
- subroutine **swap_ip** (x, p, n)
- subroutine **swapt_ip** (x, p, n)
- subroutine **ident** (a, n)
- subroutine **transpose** (a, lda, b, ldb)
- subroutine **gaujordf** (a, m, n, indr, indc, ipiv, ierr, rmult)
- subroutine **RZERO3** (A, B, C, N)
- subroutine **INVCHK2** (A, B, N)
- subroutine **FACIND2** (JS1, JF1, JSKIP1, JS2, JF2, JSKIP2, IFC)
- INTEGER **INDX132** (S1, S2, L2)
- INTEGER **INDX1** (S1, S2, L2)
- INTEGER **INDX2** (S1, S2, L2)
- subroutine **CSPLIT** (S0, S1, S2, L0)
- subroutine **LSHFT** (STRING, IPT)
- subroutine **LJUST** (STRING)
- subroutine **UNITVEC** (X, Y, Z, N)
- subroutine **CAPIT** (LETTRS, N)
- subroutine **irank_vec** (ind, nn, a, m, n, key, nkey, aa)

3.2.1 Detailed Description

matrix utility routines

This file contains various matrix utility routines, such as copy

3.2.2 Function Documentation

3.2.2.1 subroutine COPY (REAL,dimension(1) *A*, REAL,dimension(1) *B*, N)

Copy N REAL elements from B to A.

this routine copies some stuff

Parameters:

B the source for the copy

A the destination for the copy

Todo

make this more general than just working with REAL

3.3 src/movwin.F File Reference

brief description of the file

Functions

- subroutine movwin_setup

  Brief description of the subroutine.

- subroutine **READATW**
- subroutine RDMESHW

  Read moving window mesh.

- subroutine **RDCURVW**
- subroutine **RDBDRYW**
- subroutine **mwsave_pre**
- subroutine **mwsave_aft**
- subroutine **setmovw1**
- subroutine **setmovw**

3.3.1 Detailed Description

brief description of the file

A more detailed description of the file

3.3.2 Function Documentation

3.3.2.1 subroutine movwin_setup ()

Brief description of the subroutine.

A more detailed descripton goes here. This is an example of a detailed description of a method

Parameters:

param1 a description of the first parameter

param2 a description of the second parameter

Todo

things to do can be called out here

Returns:

the return value goes here

See also:

READATW()
RDMESH()
RDMESHW()

3.3.2.2 subroutine RDMESHW ()

Read moving window mesh.

Read the moving window mesh. Skips elements not in the current window.

Parameters:

param1 a description of the first parameter

param2 a description of the second parameter

Todo

things to do can be called out here

Returns:

the return value goes here

Index