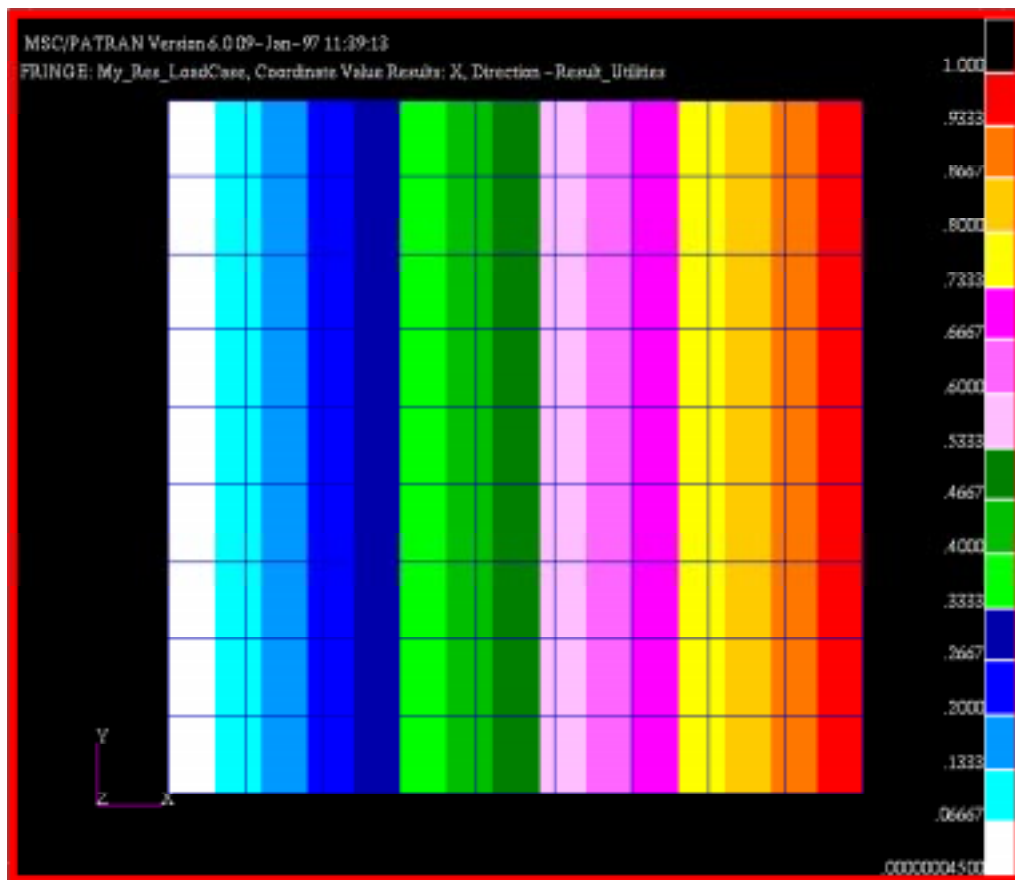


## Exercise 19

# *Creating Nodal Results*



### Objectives:

- Write a PCL function which creates nodal results.
- Understand how MSC.Patran stores results.



## Problem Description:

In this Exercise write a PCL function which creates nodal results based on the X, Y or Z location of the node. This will be done by using the function `res_util_create_nodal_result()`.

## Files:

All the files that are used in this exercise are listed below. Each list includes the file, where it originated, and a summary of information of how it relates to the exercise.

File	Supplied/Created	Description
<code>create_xyz_result.pcl</code>	Created	This file should be supplied with the programs.

## Suggested Exercise Steps:

- Write a PCL function `add_nodal_results()` which will be called by `create_xyz_result()`.
- Compile the function
- Verify the PCL function by making 3 sets of results.

## Exercise Procedure:

1. Either use `vi` or `jot` as the text editing tool. Open the file named `create_xyz_result.pcl`. It should already exist in your directory. Complete the function called `add_nodal_results()`.

Type `p3` at the prompt and `<return>`.

After the main menu and command window appear, type **!!input create\_xyz\_result.pcl** in the command line

Resolve any compile errors by editing `create_xyz_result.pcl`, and re-compiling in `p3`.

2. Open a database that has nodes, and elements.

If you do not have a database with nodes or elements create one now.

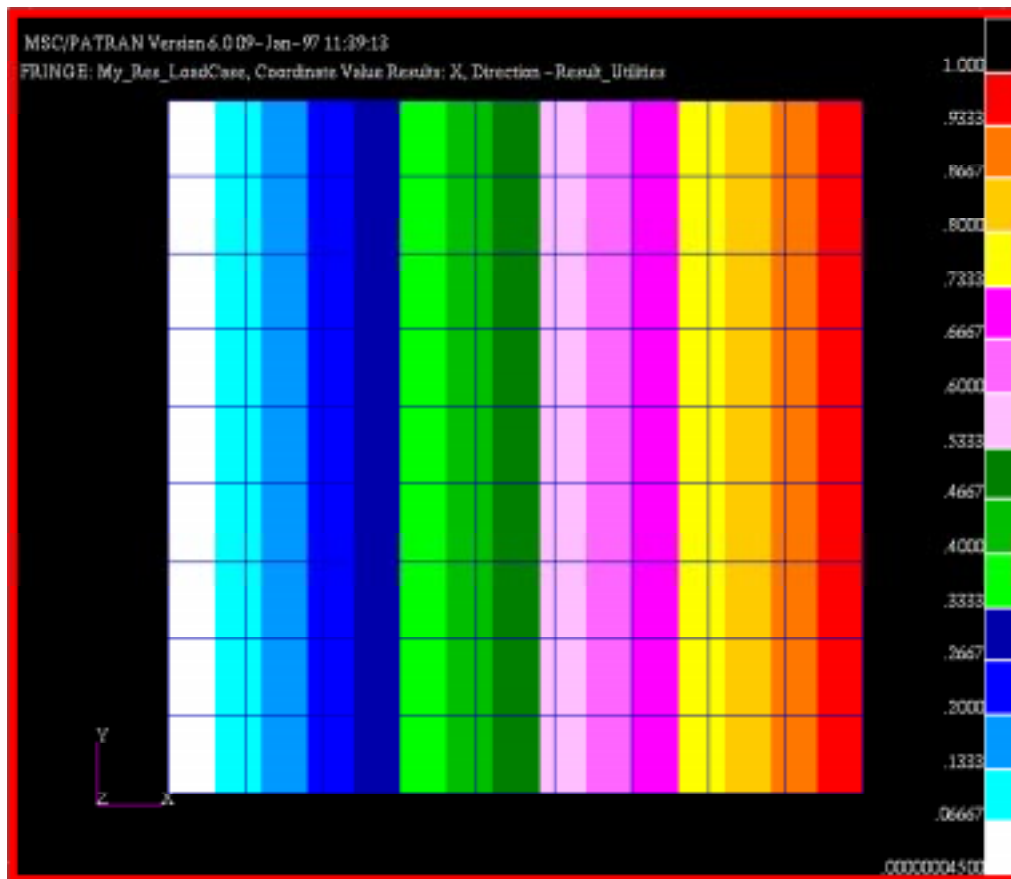
3. Test the function.

```
!!input create_xyz_result.pcl  
create_xyz_result(1)
```

The “1” in the parentheses denotes that you are asking for the position of the nodes in the x location. By typing in the same command, however replacing the 1 with a 2 will give the y locations of the nodes.

There should be two results files to choose from, since the PCL file added a separate result file for the y locations.

4. Click on the Results radio button select the load case that you just created and click apply.
5. The following results should appear for a simple patch.













```

Function add_nodal_results(num_nodes, nodeids, values,@
                        subcase_title, pri_title, sec_title)
INTEGER nodeids(), num_nodes
REAL values()
STRING subcase_title[], pri_title[], sec_title[]
STATIC INTEGER lcid = -1
INTEGER scid, sect_id
INTEGER pri_res_id, status
INTEGER sec_res_id
INTEGER layer_id = 1
INTEGER res_ids(5)

/*
* Create a load case
*/
If ( lcid == -1 ) THEN

    status = db_create_load_case( @
        /* load case name */ ***** 1 ***** , @
        /* load case type */ ***** 2 ***** , @
        /* load case desc */ ***** 3 ***** , @
        /* num_l
        /* load_
        /* dynam
        /* evalu
        /* load
        /* load

        IF ( status
            write("e
            RETURN s
        END IF
    END IF

/*
* Create a sub
*/

```

```

*1* "My_Res_Loadcase"
*2* 1,
*3* "User defined results, Made for PAT304 class",
*4* lcid,
*5* subcase_title
*6* scid
*7* pri_res_id
*8* sect_id
*9* layer_id
*10* lcid
*11* scid
*12* layer_id
*13* res_ids
*14* num_nodes
*15* nodeids
*16* values

```

PCL Solutions: