

EMMAPDSP.DOC

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A. INTRODUCTION

EMMAPDSP is used to display MAP data as grey-level or contour plots on the LEXIDATA. If the MAP contains 3D data, enter the numbers of the first and last sections to be plotted and the number of sections to skip between each plot (NSEC1,NSEC2,ISKIP: <CR>=1,NSEC,0). Indicate whether you want a grey-level or contour type plot. If you chose to erase the LEXIDATA screen, and a grey-level display has been chosen, you must signify which color table is to be used.

B. GREY-LEVEL DISPLAYS

Specify the size (in pixels) you wish the x-dimension of each unit cell to be (y-dimension is automatically be scaled appropriately). Indicate where you want the center of the display to appear on the LEXIDATA screen (ICENX, ICENY; default = 640,512) and the number of unit cells to display in the x and y directions (NCELLX,NCELLY; default = 1,1). For 3D MAP data, you have the option of positioning each section individually or automatically. If you choose automatic plotting, (AUTO_PLOT = .TRUE.), specify the position to plot the first section in the series, then specify the size of the borders between displayed sections (COL_BORDER, ROW_BORDER: <CR> = 0,0) and the number of sections in each row of the gallery (a default value (PLOT_PER_ROW) calculated by the program depends on the overall size you have chosen for each displayed section and the position specified for the first section. You may reset the value of PLOT_PER_ROW to any value less than or equal to the default and greater than zero.)

You may rescale the "relative" dimensions of the unit cell edges when displayed by changing the values for MAP_ABANG (the angle between the two cell edges) and AOVERB (the ratio of the lengths of the two cell edges). Hit a <CR> to accept the listed default values. Please note that, if you have used EMSF2DBT to produce a 2D MAP (which is 64 x 64 or 128 x 128 regardless of the

cell dimensions and thus AOVERB = 1.0 and MAP_ABANG = 90.0), then, to achieve proper scaling, the values of MAP_ABANG and AOVERB must be changed. The minimum and maximum density values (MAP_MIN,MAP_MAX) in the 2D or 3D MAP are listed and may be reset to change contrast, if desired.

C. CONTOUR LEVEL DISPLAY

Most of the options available for this type display are identical to those used in the grey-level displays. At present, the contour display only works for a single unit cell, so NCELLX,NCELLY always = 1,1. You may set the colors for the positive and negative contour lines (default is 255,255,0 = YELLOW for positive contours and 0,200,0 = GREEN for negative contours) and for the background (default 25,0,100 = DARK BLUE). Choose how many total contour intervals to subdivide the MAP into (default = 5; limits = 1-20) and the density value at which the first contour interval is to begin (default value is calculated at $(MAP_MAX - MAP_MIN)/(NCONTOUR+1)$). After the contour plot is finished for the current section, you have the choice to replot using different parameters for the contour and background colors, # contour intervals and starting level. Be aware, however, that if you choose to replot at this point the entire screen is erased.

D. FUTURE IMPROVEMENTS/ENHANCEMENTS

1. Add Dan Hellerstein's routine to plot contour maps with more than 1x1 unit cell.
2. Add Dan Hellerstein's routines to plot contours using anti-aliased vectors (for publication quality displays).
3. Add option to plot 3D data using perspective type display.