



FEM-Geo program description

Adrian Doicu, Thomas Wriedt, Yuri Eremin

This FEM-Geo program is needed to generate .FEM geometry files for input of 3D particle shape data into program TNONAXSYM. For information on the file format .FEM have a look at the comments in program TNONAXSYM.

The program calls the `ivread_wr.f90` subroutine. This routine is based on the `ivread.f90` routine by John Burkardt (1999). The program converts various computer graphics files formats (dxf, obj, oogl, smf, vmrl) into the .FEM format needed with TNONAXSYM. (Have a look at the comments in `inread`). But the focus of the program FEMGeo_Wr is on the wavefront .obj file format. The input .obj file should be such that it only consists of triangular (!) surface patches! No free form curves are supported. All dimensions are in microns. This .obj file format will also be generated by the SScATT (super-ellipsoid scattering tool), which is also included with this CD. FEMGeo has not been tested with the other file formats that can be read by the `ivread.f90` routine.

The Hyperfun program (www.hyperfun.org) is suitable for generation of other particle shapes. For conversion to .obj, visualization and scaling you may use Deep Exploration (www.righthemisphere.com), for grid reduction you may use Rational Reducer Professional (www.rational-reducer.com). To increase the number of faces of a body you can use a divide by four subdivision scheme implemented in the Triangles DOS program (www.geocities.com/Athens/Academy/8764/triangdoc.html). A divide by three or by four scheme is also included in MilkShape-1.5.7.